

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

KBC ASSET MANAGEMENT NV, on behalf
of itself and all others similarly situated,

Plaintiff,

- against -

BANK OF AMERICA CORPORATION;
BANK OF AMERICA, N.A.; MERRILL
LYNCH, PIERCE, FENNER & SMITH INC.;
CRÉDIT AGRICOLE S.A.; CRÉDIT
AGRICOLE CORPORATE AND
INVESTMENT BANK; CREDIT SUISSE AG;
CREDIT SUISSE GROUP AG; CREDIT
SUISSE INTERNATIONAL; CREDIT SUISSE
SECURITIES (USA) LLC; DEUTSCHE BANK
AG; DEUTSCHE BANK SECURITIES INC.;
NOMURA HOLDINGS, INC.; NOMURA
INTERNATIONAL PLC, NOMURA
SECURITIES INTERNATIONAL, INC.,
HIREN GUDKA; AMANDEEP SINGH
MANKU; SHAILEN PAU; and BHARDEEP
SINGH HEER,

Defendants.

Civil Action No. 16-cv-8621

CLASS ACTION COMPLAINT

JURY TRIAL DEMANDED

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Plaintiff KBC Asset Management NV, individually and on behalf of all others similarly situated, as defined below, bring this class action for treble damages and injunctive relief and alleges as follows:

NATURE OF THE ACTION

1. This is an antitrust class action charging the Defendant banks with conspiring to fix the prices of supranational, sub-sovereign, and agency (“SSA”) bonds in violation of Section 1 of the Sherman Act. Plaintiff brings this action on behalf of itself and a proposed Class of all persons or entities who, from January 1, 2010 to November 2014 (the “Class Period”), directly entered into SSA bond transactions with Defendants.

2. In the same way that the U.S. Treasury borrows money by issuing bonds, supranational organizations (like the World Bank), sub-sovereign entities (like provinces in Canada), and government agencies (like Fannie Mae and Freddie Mac) issue bonds to raise capital. SSA issuers use the capital raised through bond issuances to fund and fulfill a broad range of social, economic, and public-policy mandates critical to economies across the globe; they include among their ranks development banks, infrastructure developers, social security funds, export creditors, utilities, and transportation entities. SSA bonds are generally regarded as highly secure—a safe haven marked by high credit quality—and investors have increasingly turned to them, particularly in the aftermath of the U.S. and European financial crises of 2008.

3. Investors—such as Plaintiff here—who wish to invest in SSA debt but did not buy bonds at issuance must do so on the secondary market. They, along with SSA bond holders wishing to sell their bonds, rely on dealers—the Defendants here—to act as market makers, *i.e.*, banks and other financial firms who stand ready to buy or sell SSA bonds in the resale, or secondary, market. When a customer wants to buy or sell SSA bonds, it asks a dealer for a quote. The dealer, in turn, gives the customer a “bid,” the price it would pay for the bond, and an

“ask,” the price at which it would sell the bond. The difference between the bid and ask—known as the “bid-ask spread”—is the way the dealer is paid.

4. But the Defendants here were not satisfied with the bid-ask spreads in the SSA market. Instead of competing with each other for customers’ business by tightening spreads, which appeals to customers but reduces the dealers’ margins, Defendants conspired to manipulate the prices and spreads of SSA bonds.

5. Beginning at least as early as January 2010, Defendants conspired to fix SSA bond prices by secretly exchanging customer trading information, discussing the bids and asks they planned to quote to customers, agreeing to refrain from providing price quotes in some instances, and agreeing to set bid-ask spreads at artificially wide levels. The bank Defendants executed their conspiracy by surreptitiously communicating with each other in person, via telephone, and by using private, electronic chat rooms and instant messaging services through which they could secretly and easily conspire. These traders included Defendants Hiren Gudka, who worked at Bank of America and Deutsche Bank; Amandeep Singh Manku, who worked at Bank of America and Crédit Agricole; Shailen Pau, who worked at Credit Suisse; and Bhardeep Singh Heer, who worked at Nomura. Fully aware of the illegal nature of their conduct, the Defendants’ traders created a new private chat room every day to avoid detection. The details of Defendants’ conspiracy are contained in the transcripts of the chat rooms they used.

6. Beginning in or around November 2014, Defendants began to scale back their communications regarding SSA bond prices. The likely trigger for this change was the announcement of multi-billion dollar settlements between government regulators and major banks in connection with the banks’ role in a price-fixing conspiracy in the foreign exchange (“FX”) markets. On November 12, 2014, several regulators—including the Commodity Futures

Trading Commission, the Office of the Comptroller of the Currency, and the U.K. Financial Conduct Authority—announced the first settlements and publicly released transcripts of some of the banks’ illicit chat room conversations. With the banks’ conspiratorial communications out in the open, Defendants stopped using chat rooms to discuss manipulating SSA bond prices.

7. As with banks’ previous manipulation of other financial markets, Defendants’ SSA conspiracy is currently under investigation by regulatory agencies around the world. In December 2015, *Bloomberg* reported that the U.S. Department of Justice (“DOJ”) had launched a criminal investigation regarding “possible manipulation in the trading of agency bonds.”¹ According to the *Bloomberg* report, DOJ officials “are focusing on activity by London-based traders” and are examining “whether the traders at different banks coordinated with each other before deciding who would offer price quotes to potential buyers and sellers.”² Later reports stated that the DOJ “is investigating allegations that SSA bond traders at different banks agreed [on] prices and shared information on certain US dollar bonds in chatrooms they established for that purpose.”³

¹ David McLaughlin & Tom Schoenberg, *U.S. Said to Probe Possible Rigging in Agency Bond Market*, *Bloomberg* (Dec. 9, 2015), at <http://bloom.bg/1RaD1OR>.

² *Id.*

³ Abhinav Ramarayan & Helene Durand, *EXCLUSIVE – DoJ investigates bond traders over market-rigging*, *Int’l Fin. Rev.* (Jan. 6, 2016), at <http://www.ifre.com/exclusive-doj-investigates-bond-traders-over-marketrigging/21230385.article>.

8. Since the initial reports of the DOJ's investigation, it has also been reported that the U.K. Financial Conduct Authority⁴ and the European Commission⁵ are also investigating Defendants' misconduct.

9. In a tacit admission of their wrongdoing, Defendants have suspended or terminated many of the top-level employees who were managing or working on their SSA trading desks. Defendants Bank of America, Crédit Agricole, Credit Suisse, and Nomura all suspended or terminated their heads of SSA trading as Defendants' conspiracy began to come to light.

10. Evidence of this conspiracy is supported by independent economic analysis, including a preliminary analysis conducted by Plaintiff. Plaintiff's initial analysis demonstrates that bid-ask spreads in the SSA bond market were artificially inflated relative to bid-ask spreads of bonds of similar risk profiles for several years starting in 2010 until mid-November 2014, after which SSA spreads narrowed on a relative basis. Plaintiff's analysis also demonstrates the existence of several historical patterns in SSA bid-ask spreads and prices that are all indicative of an SSA bond price-fixing conspiracy that started to break up in mid-November 2014.

11. Defendants' conspiracy inflicted severe financial harm on Plaintiff and the Class and restrained competition in the market for SSA bonds. Plaintiff and the Class entered into millions of dollars' worth of SSA transactions with the Defendants during the Class Period. As a result of their conspiracy, Defendants padded their own profits, and their personnel took home huge annual bonuses, by cheating Plaintiff and the Class out of many millions of dollars.

⁴ Suzi Ring & Tom Schoenberg, *U.K. Said to Open Probe Into Rigging of Agency-Bond Market*, Bloomberg (Jan. 20, 2016), at <http://bloom.bg/1NjWIfO>.

⁵ Foo Yun Chee, *EU investigating possible rigging of debt market, sources say*, Reuters (Feb. 10, 2016), at <http://www.reuters.com/article/us-eu-antitrust-bonds-idUSKCN0VI213>.

Defendants also directly injured each Class member—including pension funds, university endowment funds, hedge funds, insurance companies, corporate treasuries, fiduciary and depository institutions, small banks, and money managers—in much the same way, resulting in potentially billions of dollars in damages.

12. Defendants' conspiracy offends the very core of the antitrust laws. Defendants were supposed to be aggressively competing with each other for the business of their customers, not secretly conspiring to achieve profits they could not have achieved on their own. Accordingly, Plaintiff brings this class action to hold Defendants accountable for the injuries they have caused.

JURISDICTION AND VENUE

13. This Court has subject matter jurisdiction over this action pursuant to Sections 4 and 16 of the Clayton Act (15 U.S.C. §§ 15(a) and 26), and pursuant to 28 U.S.C. §§ 1331 and 1337(a). This Court also has jurisdiction over the state law claims under 28 U.S.C. § 1367, because those claims are so related to the federal claims that they form part of the same case or controversy, and under 28 U.S.C. § 1332, because the amount in controversy for the Class exceeds \$5,000,000 and there are members of the Class who are citizens of a different state than Defendants.

14. Venue is proper in this District pursuant to 15 U.S.C. §§ 15(a) and 22, as well as pursuant to 28 U.S.C. § 1391(b), (c), and (d), because during the Class Period, all Defendants resided, transacted business, were found, or had agents in this District; a substantial part of the events or omissions giving rise to these claims occurred in this District; and a substantial portion of the affected interstate trade and commerce discussed herein was carried out in this District.

15. This Court has personal jurisdiction over Defendants pursuant to the nationwide contacts test provided for in 15 U.S.C. § 22, because Defendants, as set forth below, were formed

in or have their principal places of business in the United States. In addition, this Court has personal jurisdiction over Defendants, because each Defendant transacted business throughout the United States, including in this District; each Defendant had substantial contacts with the United States, including in this District; each Defendant committed overt acts in furtherance of Defendants' conspiracy in the United States; each Defendants is an agent of the other Defendants; and Defendants' conspiracy was directed at, and had the intended effect of, causing injury to persons residing in, located in, or doing business throughout the United States, including in this District.

16. Defendants' activities, and those of their co-conspirators, were within the flow of, were intended to, and did have a substantial effect on interstate commerce.

PARTIES

A. Plaintiff

17. Plaintiff KBC Asset Management NV ("KBC") maintains its principal place of business in Brussels, Belgium. During the Class Period, KBC entered into one or more SSA bond transactions with one or more Defendants.

B. Defendants

18. Whenever reference is made to any Defendant entity, such reference includes that entity, its parent companies, subsidiaries, affiliates, predecessors, and successors. In addition, whenever reference is made to any act, deed, or transaction of any entity, the allegation means that the entity engaged in the act, deed, or transaction by or through its officers, directors, agents, employees, or representatives while they were actively engaged in the management, direction, control, or transaction of the entity's business or affairs.

19. **Bank of America.** Defendant Bank of America Corporation is a Delaware corporation with its principal place of business in Charlotte, North Carolina. Bank of America

Corporation is a multi-national banking and financial services corporation with its investment banking division located in New York, New York.

20. Defendant Bank of America, N.A. is a federally chartered national banking association with its principal place of business in Charlotte, North Carolina, and is an indirect, wholly owned subsidiary of Bank of America Corporation.

21. Defendant Merrill Lynch, Pierce, Fenner & Smith Inc. is a corporation organized under the laws of Delaware with its principal place of business in New York, New York, and is a wholly owned subsidiary of Bank of America Corporation.

22. Defendants Bank of America Corporation, Bank of America, N.A., Merrill Lynch, Pierce, Fenner & Smith Inc., and their subsidiaries and affiliates are referenced collectively in this Complaint as “Bank of America.” During the Class Period, Bank of America purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Bank of America employed Amandeep Singh Manku and Hiren Gudka, both of whom are SSA bond traders under investigation by the DOJ.

23. **Crédit Agricole.** Defendant Crédit Agricole S.A. is a corporation organized and existing under the laws of France with its principal place of business in Montrouge, France.

24. Defendant Crédit Agricole Corporate and Investment Bank is a wholly owned subsidiary of Crédit Agricole S.A. and is a bank organized and existing under the laws of France with its principal place of business in Paris, France, and with branch locations in New York, New York.

25. Defendants Crédit Agricole S.A., Crédit Agricole Corporate and Investment Bank, and their subsidiaries and affiliates are referenced collectively in this Complaint as “Crédit Agricole.” During the Class Period, Crédit Agricole purchased SSA bonds from and sold SSA

bonds to members of the Class in the United States. During the Class Period, Crédit Agricole employed Defendants Amandeep Singh Manku and Shailen Pau, both of whom are SSA bond traders under investigation by the DOJ.

26. **Credit Suisse.** Defendant Credit Suisse Group AG is a corporation organized and existing under the laws of Switzerland with its principal place of business in Zurich, Switzerland.

27. Defendant Credit Suisse AG is a wholly owned subsidiary of Credit Suisse Group AG and is a bank organized and existing under the laws of Switzerland with its principal place of business in Zurich, Switzerland, and it maintains a New York, New York branch. Credit Suisse AG is licensed by the New York Department of Financial Services and operates a branch registered in New York, New York.

28. Defendant Credit Suisse Securities (USA) LLC is a corporation organized and existing under the laws of the State of Delaware with its principal place of business in New York, New York, and is a wholly owned subsidiary of Credit Suisse Group AG.

29. Defendants Credit Suisse Group AG, Credit Suisse AG, Credit Suisse Securities (USA) LLC, and their subsidiaries and affiliates are referenced collectively in this Complaint as “Credit Suisse.” During the Class Period, Credit Suisse purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Credit Suisse employed Defendant Shailen Pau, an SSA bond trader who is under investigation by the DOJ.

30. **Deutsche Bank.** Defendant Deutsche Bank AG is a corporation organized and existing under the laws of Germany with its principal place of business in Frankfurt, Germany. Deutsche Bank AG is licensed by the New York Department of Financial Services with a registered address in New York, New York.

31. Defendant Deutsche Bank Securities Inc. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York, and is an indirect wholly owned subsidiary of Deutsche Bank AG.

32. Defendants Deutsche Bank AG, Deutsche Bank Securities Inc., and their subsidiaries and affiliates are referenced collectively in this Complaint as “Deutsche Bank.” During the Class Period, Deutsche Bank purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Deutsche Bank employed Defendant Hiren Gudka.

33. **Nomura.** Defendant Nomura Securities International, Inc. is a corporation organized and existing under the laws of the State of New York, with its principal place of business in New York, New York. Defendant Nomura Securities International, Inc. and its subsidiaries and affiliates are referenced collectively in this Complaint as “Nomura.” During the Class Period, Nomura purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Nomura employed Defendant Bhardeep Singh Heer, an SSA bond trader under investigation by the DOJ.

34. **Hiren Gudka.** Defendant Bhardeep Singh Heer (“Gudka”) is an individual residing in Middlesex, England. During the Class Period, Gudka purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Gudka was an SSA bond trader employed by Defendants Bank of America and Deutsche Bank.

35. **Amandeep Singh Manku.** Defendant Amandeep Singh Manku (“Manku”) is an individual residing in Essex, England. During the Class Period, Manku purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Manku was an SSA bond trader employed by Bank of America and Crédit Agricole.

36. **Shailen Pau.** Defendant Shailen Pau (“Pau”) is an individual residing in London, England. During the Class Period, Pau purchased and sold SSA bond to members of the Class. During the Class Period, Pau was an SSA bond trader employed by Credit Suisse and Crédit Agricole.

37. **Bhardeep Singh Heer.** Defendant Bhardeep Singh Heer (“Heer”) is an individual residing in Essex, England. During the Class Period, Heer purchased SSA bonds from and sold SSA bonds to members of the Class in the United States. During the Class Period, Heer was an SSA bond trader employed by Nomura.

38. **Other conspirators.** Various other entities, persons, firms, and corporations, that are unknown and not named as Defendants, have participated as co-conspirators with Defendants and have performed acts and/or made statements in furtherance of the conspiracy. Defendants are jointly and severally liable for the acts of their co-conspirators whether named or not named as Defendants in this Complaint.

FACTUAL ALLEGATIONS

I. THE SSA BOND MARKET

39. The secondary SSA bond market is the market in which bonds issued by supranational institutions, sub-sovereign entities, and government agencies are bought and sold. Overall, estimates of the global SSA bond market ranges from \$9 to \$15 trillion. Global SSA issuance volumes in 2015 alone reached over \$843 billion.

A. SSA Issuers

40. Supranational bond issuers are large, multilateral institutions with shareholders from several countries and global economic mandates. Examples include the International Bank for Reconstruction and Development (“IBRD”) and the International Finance Corporation (“IFC”) of the World Bank Group; the European Investment Bank (“EIB”); and the African and

Asian Development Banks (“AfDB” and “ADB,” respectively). Sub-sovereign bond issuers are state-level entities sitting one level below a sovereign government. Examples of sub-sovereign issuers include Germany’s states or Canada’s provinces. Agency bond issuers include subdivisions of a sovereign state or other institutions that perform tasks on behalf of a governing sovereign such as Fannie Mae and Freddie Mac in the United States. These issuers include Germany’s Kreditanstalt für Wiederaufbau (“KfW”), France’s Caisse d’Amortissement de la Dette Sociale (“CADES”), and Spain’s Instituto de Credito Oficial (“ICO”).

41. These and other SSA institutions issue debt on a regular basis to raise capital needed to fund global, continental, and regional projects and development programs.

B. Issuance of SSA Bonds

42. SSA bonds are regarded as secure investments because they are explicitly or implicitly guaranteed by the related sovereign. Together, these SSA bonds occupy an important segment of the broader bond market, sitting between sovereign government issuers (*e.g.*, U.S. Treasury bonds) on the one hand and private credit issuers (*e.g.*, corporate bonds) on the other.

43. Unlike Treasury bonds, which are often issued through auctions, SSA bonds are typically issued through syndication. In a syndication, if an SSA institution wants to issue bonds, it will find a bank or group of banks to underwrite its bond issue and sell those bonds to investors. The banks are responsible for finding investors to purchase the bonds at the time of issuance and also for pricing the bonds.

44. Issuers determine the currency in which an SSA bond issue will be denominated. The U.S. dollar-denominated segment of the SSA market is attractive to investors looking for high-quality bonds with higher yields than U.S. Treasuries. U.S. agency bond issuances (which are always dollar-denominated) have averaged around \$400 billion annually, and dollar-denominated supranational and sub-sovereign issuances have averaged around \$300 billion per

year. In total, there are approximately \$1.96 trillion in U.S. agency bonds outstanding, and approximately \$840 billion in U.S. dollar-denominated supranational and sub-sovereign bonds outstanding. After a syndication of U.S. dollar-denominated bonds is put together, the bonds are sold to investors principally in the United States and Europe.

45. As the Defendant banks underwrite SSA issuances, they often purchase large quantities of the initial issuance of bonds. According to the World Bank, one of the largest SSA issuers, banks including the Defendants accounted for more than 28% of all SSA bond purchases (and over 25% of AAA-rated supranational issuances) in 2013-14.⁶

C. The Secondary SSA Bond Market

46. Customers—like Class members here—who wish to purchase SSA bonds that they did not purchase at the time of issuance must buy them on the secondary market. And because Defendants are both the underwriters for SSA bond issuances and the primary dealers for SSA bond trading, customers have no choice but to deal with the Defendants.

47. Trading in the SSA secondary market is done over-the-counter, *i.e.*, directly with a counterparty. In limited instances, U.S. agency bonds are also traded over electronic trading platforms. The Defendants act as dealers in this market: they provide liquidity or “make markets” by being willing to continuously buy and sell SSA bonds.

48. A dealer in the SSA market quotes prices at which it stands ready to buy or sell SSA bonds. When a customer looks to buy or sell a bond, it asks a dealer for a quote. A quote consists of a “bid” and an “ask” on a particular SSA bond. The “bid” is the price at which the dealer is willing to buy the specific SSA bonds. The “ask” is the price at which the dealer is

⁶ See http://www.gioa.us/presentations/2014/2014_World%20Bank_Richardson_Jefferies_Kim.pdf.

willing to sell the indicated SSA bonds. The difference or margin between the bid and ask is the “bid-ask spread.” The bid-ask spread is the dealers’ compensation.

49. Bid-ask spreads are the primary way banks compete against each other for customers. Customers want narrower spreads, meaning, they want to buy bonds for less and sell them for more. By quoting narrower spreads, Defendants can win sales, gain customers, and build market share. Conversely, widening spreads results in losses to consumers.

50. Customers generally execute SSA transactions either by telephone or electronic message to a trader at a dealer bank, or through an electronic trading platform. A dealer-to-client electronic trading platform is a computer system that customers can use to execute orders with dealers over a network. Electronic trading platforms include single-bank systems and multi-bank dealer platforms such as MarketAxess, TradeWeb, Bloomberg BondTrader, and MTS Bondvision. Regardless of whether customers transact through telephone, electronic message, or electronic trading platform, the system is the same: a customer requests a quote from a dealer, which in turn provides a bid-ask quote to the customer.

II. DEFENDANTS CONSPIRE TO FIX THE SPREADS OF SSA BONDS

51. Beginning at least as early as January 1, 2010, Defendants conspired on a daily basis to fix spreads in the SSA market. The conspiracy was targeted at inflating bid-ask spreads.

52. According to industry insiders, despite its vast size, the SSA market is a “small world.” London SSA traders are a tight-knit community, and they regularly socialize at events hosted by issuers and brokers, who facilitate trades between banks. The collegial nature of the SSA bond market enabled Defendants’ conspiracy by providing Defendants with ample opportunity to collude.

53. In addition to communicating via telephone and in person, top-level traders on Defendants’ SSA desks used electronic communications, including chat rooms, to meet and

conspire to manipulate and inhibit price competition and maximize bid-ask spreads. According to news reports, “the use of permanent Bloomberg chatrooms within market sectors was commonplace.”⁷

54. In the primary issuance market, information was shared freely in chat rooms among the banks within the underwriting syndicates for new issuances. It appears that members of each bank’s sales, syndicate, and trading desks were present in these chats. Traders from multiple banks had full access to the order book on each deal, and were part of discussions about the price at which newly issued bonds should trade in the secondary market, creating a shared base of knowledge among bond traders that was highly conducive to collusion. As one trader noted, “once banks are mandated [to underwrite an issuance] they have to work together Given the collegia[l] nature, people might talk about things that they shouldn’t.”⁸

55. In the secondary market, access to chat rooms was restricted to traders at the Defendant banks. Defendants’ traders attempted to avoid detection by constantly creating new chat rooms. One SSA bond trader interviewed stated that bond traders “created a new chatroom each day to discuss activity and prices.”⁹

56. In these chat rooms, Defendants conspired to fix spreads through a number of collusive tactics aimed at taking advantage of their clients. Defendants’ traders regularly shared confidential client information about orders. Defendants have a number of regular customers with predictable, large SSA bond transactions. With knowledge of their clients’ portfolios and

⁷ Ramarayan & Durand, *supra*.

⁸ Craig McGlashan, et al., ‘*Forced competition*’ to generate trading flow under fire for fomenting SSA scandal, Global Capital (Jan. 7, 2016), <http://www.globalcapital.com/article/vz0phyg7g5jt/39forced-competition39-to-generate-trading-flow-under-fire-for-fomenting-ssa-scandal>.

⁹ *Id.*

trading patterns, Defendants conspired to plan trading strategies and set spreads. Upon receiving customers' requests for quotes, Defendants shared specific bond and volume information with their competitors.

57. After receiving customers' orders, Defendants utilized chat rooms to conspire to inhibit price competition and maximize bid-ask spreads. Defendants regularly agreed with each other on who would offer price quotes to potential buyers and sellers of bonds. As part of these discussions, some Defendants agreed to withhold offering quotes to customers on certain SSA bonds. In so doing, Defendants inhibited customers' ability to shop around for better prices.

58. In addition to conspiring on who would offer prices, Defendants also conspired on the spreads that were offered to customers. Defendants agreed that they would offer the same or substantially similar spreads to potential buyers and sellers of SSA bonds. The bid-ask spreads that were quoted to customers were, as a result of these agreements, artificially inflated. That is, Defendants quoted artificially high asks on certain bonds and artificially low bids on those same bonds in order to maximize their spreads to the detriment of the Class. As one SSA bond trader stated: "if you can speak to another trader and agree to sell a bond at a certain price and not below, then that makes a big difference."¹⁰

59. As a direct and proximate result of the conspiracy, Plaintiff and each Class member transacted in artificially inflated bid-ask spreads on their SSA transactions with Defendants. At the same time, Defendants reaped massive, supracompetitive profits on SSA trades that if not for their conspiracy would have had smaller margins.

III. THE DEPARTMENT OF JUSTICE AND OTHER REGULATORS INVESTIGATE THE SSA SPREAD-FIXING CONSPIRACY

¹⁰ Ramarayan & Durand, *supra*.

60. Law enforcement authorities and regulatory agencies in the United States, United Kingdom, and European Union are actively investigating Defendants' conspiracy and have uncovered evidence of wrongdoing. Chat room transcripts obtained by the DOJ as part of its investigation into manipulation of the SSA market and other benchmarks confirm that traders conspired to coordinate and fix SSA spreads at artificially high levels.

61. On December 9, 2015, *Bloomberg* first reported that the DOJ had launched an investigation into possible collusion in the SSA market, "focusing on activity by London-based traders."¹¹ A month later, on January 6, 2016, the *Financial Times* and *International Financing Review* confirmed the DOJ's probe, the latter indicating that the DOJ was looking at "possible manipulation of bond prices."¹²

62. Initial reports state that the DOJ learned of Defendants' wrongdoing when trader chat transcripts were turned over to the DOJ as part of the settling banks' LIBOR and FX investigations and that the DOJ's focus is trading in the SSA secondary market. According to the *International Financing Review* report, the DOJ "is investigating allegations that SSA traders at different banks agreed [on] prices and shared information on certain US dollar bonds in chat rooms they established for the purpose."¹³ According to the *Bloomberg* report, DOJ "[p]rosecutors have obtained transcripts of online chat-room conversations indicating possible misconduct and have contacted banks, asking them to delve further into the behavior."¹⁴ The

¹¹ David McLaughlin & Tom Schoenberg, *U.S. Said to Probe Possible Rigging in Agency Bond Market*, *Bloomberg* (Dec. 9, 2015), at <http://www.bloomberg.com/news/articles/2015-12-09/u-s-said-to-probe-possible-rigging-in-agency-bond-market>.

¹² Ramarayan & Durand, *supra*.

¹³ *Id.*

¹⁴ McLaughlin & Schoenberg, *supra*.

DOJ has sent information requests to Bank of America, Crédit Agricole, Credit Suisse, and Nomura, among others.¹⁵

63. On January 20, 2016, *Bloomberg* reported that the U.K. Financial Conduct Authority, which previously had been assisting the DOJ, had started its own investigation into collusion in the SSA market.¹⁶ On February 9, 2016, the *Financial Times* reported that in addition to the DOJ and Financial Conduct Authority, the European Commission had also opened a cartel investigation into possible collusion in the SSA market.¹⁷

IV. DEFENDANTS SUDDENLY REMOVE THEIR HEADS OF SSA TRADING

64. Confirming their involvement in wrongdoing and the seriousness of the investigations into Defendants' conspiracy, Defendants have terminated or suspended employees on their SSA trading desks that participated in the conspiracy.

65. In late 2015, Bank of America suspended or terminated Gudka, its head of SSA trading. Gudka had previously worked at Deutsche Bank, where he participated in chat room discussions as part of Deutsche Bank's SSA trading desk until his departure in April 2014. Gudka has been inactive on the FCA register for traders since the start of December 2015. According to one head bond trader who was interviewed, Gudka was "a big name" in SSA bond trading, and ran one of the largest SSA trading books in the market.¹⁸

¹⁵ Craig McGlashan, Owen Sanderson, Ralph Sinclair, & Toby Fildes, *Scandal rocks SSA market*, Global Capital (Jan. 7, 2016), at www.globalcapital.com/article/vydmn22frhms/trading-scandal-rocks-ssa-market

¹⁶ Ring & Schoenberg, *supra*.

¹⁷ Jim Brunsten, *EU probes suspected rigging of \$1.5tn debt market*, Financial Times (Feb. 9, 2016), at <https://next.ft.com/content/04befd8a-cf35-11e5-92a1-c5e23ef99c77>.

¹⁸ Craig McGlashan, et al., *'Forced competition' to generate trading flow under fire for fomenting SSA scandal*, Global Capital (Jan. 7, 2016), at <http://www.globalcapital.com/article/vz0phyg7g5jt/39forced-competition39-to-generate-trading-flow-under-fire-for-fomenting-ssa-scandal>.

66. In late 2015, Credit Suisse suspended or terminated SSA bond trader Pau. Pau previously worked at Crédit Agricole from 2009 to 2010; he has been inactive on the FCA register for traders since March 2016.

67. In late 2015, Crédit Agricole suspended or terminated SSA bond trader Manku. Manku has been inactive on the FCA register for traders since the start of December 2015. Manku was previously employed at Bank of America as recently as 2012 and at HSBC until at least 2009.

68. In late 2015, Nomura suspended SSA bond trader Heer, who was removed from Nomura's trading desk and moved to a back-office role indefinitely. He has been inactive on the FCA register for traders since March 2016.

69. At the time of their departures, Gudka, Manku, Heer, Pau were all under investigation by the DOJ for possible manipulation of SSA debt prices.¹⁹

V. DEFENDANTS' CONDUCT IS THE LATEST EXAMPLE OF CORRUPTION IN THE FINANCIAL SYSTEM

70. The government investigations into the Defendant banks' SSA trading practices are just the latest in a long string of revelations about corruption in our financial system.

A. Investigations into the Rigging of Libor

71. One of the first financial benchmarks to draw scrutiny from government regulators was the London Interbank Offered Rate ("Libor"), which was supposed to reflect the rate that banks would pay to borrow funds in the inter-bank market. Following reports in the media that Libor had been manipulated—based on the use of economic "screens" highly similar

¹⁹ Ramarayan & Durand, *supra*.

to the ones used herein—regulators launched investigations into the conduct of the group of “panel banks” responsible for setting Libor.²⁰

72. Those investigations have revealed that instead of submitting their honest, expected borrowing costs, the Libor panel banks instead submitted deliberately false quotes for the purpose of manipulating the published Libor rate. The government investigations have resulted in both criminal and regulatory charges, and have been coordinated between agencies from the United States, the United Kingdom, Canada, Japan, and the European Union.

73. The first panel bank to be formally charged was Barclays. In June 2012, Barclays was fined over \$450 million by the CFTC, DOJ, and U.K. Financial Services Authority (“FSA”). Barclays admitted to a detailed Statement of Facts, which cited scores of emails and electronic chat messages in which traders schemed to manipulate Libor rates.²¹

74. Later that year, the scandal widened when, for the first time, it was revealed that Libor manipulation was not restricted to traders within the panel banks, but also involved collusion *between* banks, and between banks and interdealer brokers. This revelation occurred in connection with UBS’s settlement agreements, wherein UBS was fined over \$1.5 billion for its role in manipulating Libor rates. Regulators found “[m]ore than 2,000 instances of unlawful conduct involving dozens of UBS employees, colluding with other panel banks, and inducing

²⁰ Rosa Abrantes-Metz, *How to Use Statistics to Seek Out Criminals*, Bloomberg (Feb. 26, 2013), at <http://www.bloomberg.com/news/2013-02-26/how-to-use-statistics-to-seek-out-criminals.html>.

²¹ DOJ, Barclays Statement of Facts (Jun. 26, 2012), at <http://www.justice.gov/iso/opa/resources/9312012710173426365941.pdf>.

interdealer brokers to spread false information and influence other banks,” including thousands of requests to manipulate Libor in emails and electronic chat messages.²²

75. The Royal Bank of Scotland (“RBS”) was the next bank to fall. In early 2013, it was charged with felony counts of wire fraud and price-fixing in violation of the Sherman Act. RBS admitted that it colluded with other banks to manipulate Libor rates. In addition to the \$250 million in criminal fines imposed by the DOJ, RBS agreed to pay \$325 million in fines and disgorgement to the CFTC, and \$137 million to the FSA. Those regulators released many specific examples of RBS’s collusive communications—including in the form of emails and instant chat messages—between traders at RBS and other panel banks. As stated before British Parliament by Johnny Cameron, RBS’s former Chairman of Global Banking and Markets, Libor manipulation involved “a cartel of people across a number of banks.”²³

76. On December 4, 2013, the European Commission issued its own set of findings, and fined Barclays, Citigroup, Deutsche Bank, JPMorgan, and RBS a total of \$1.7 billion for “participating in cartels in the interest rate derivatives industry.”²⁴ The European Commission found that each of these Defendants “coordinated with each other” to manipulate Libor and related benchmarks, which included discussions of “confidential and commercially sensitive

²² CFTC, Press Release, *CFTC Orders UBS to Pay \$700 Million Penalty to Settle Charges of Manipulation, Attempted Manipulation and False Reporting of Libor and Other Benchmark Interest Rates* (Dec. 19, 2012), at <http://www.cftc.gov/PressRoom/PressReleases/pr6472-12>.

²³ Parliamentary Commission on Banking Standards—Minutes of Evidence (Feb. 11, 2013), at <http://www.publications.parliament.uk/pa/jt201314/jtselect/jtpcbs/27/130211a.htm>.

²⁴ European Commission, Press Release (Dec. 4, 2013), at http://europa.eu/rapid/press-release_IP-13-1208_en.htm.

information that they are not allowed to share with other market players” and that they “exchanged their pricing and trading strategies and trading positions.”²⁵

77. More recently, Defendant Deutsche Bank was charged with felony counts of wire fraud and price-fixing, and agreed to pay \$625 million in fines to the DOJ.²⁶ The DOJ found that Deutsche Bank conspired with other banks to manipulate Libor. Deutsche Bank was also fined \$800 by the CFTC, \$344 million by the FSA, and \$600 million by the New York Department of Financial Services.

B. Investigations into the FX Market

78. Beginning in the fall of 2013, media reports surfaced that government regulators were investigating potential manipulation of the FX market. These investigations quickly grew in scope to include authorities from across the globe. Again, many of these claims were uncovered in part through econometric analysis of the type performed here, *i.e.*, an analysis of trading patterns and price movements.

79. In May 2015, Barclays, Citi, JPMorgan, RBS, and UBS were fined a total of \$3 billion by the DOJ, and each pled guilty to criminal conspiracy charges for manipulating FX rates.²⁷ The DOJ settlements followed a series of Orders from November 2014, where the CFTC

²⁵ Joaquín Almunia, *Introductory Remarks on Cartels in the Financial Sector* (Dec. 4, 2013), at http://europa.eu/rapid/press-release_SPEECH-13-1020_en.htm, at 2.

²⁶ DOJ, Deutsche Bank’s London Subsidiary Agrees to Plead Guilty in Connection with Long-Running Manipulation of Libor (Apr. 23, 2014), at <http://www.justice.gov/opa/pr/deutsche-banks-london-subsidiary-agrees-plead-guilty-connection-long-running-manipulation>.

²⁷ See *U.S. v. Barclays PLC*, Plea Agreement (D. Conn. May 20, 2015); *U.S. v. Citicorp*, Plea Agreement (D. Conn. May 20, 2015); *U.S. v. JPMorgan Chase & Co.*, Plea Agreement (D. Conn. May 20, 2015); *U.S. v. The Royal Bank of Scotland PLC*, Plea Agreement (D. Conn. May 20, 2015); *U.S. v. UBS AG*, Plea Agreement (D. Conn. May 20, 2015); *In the Matter of Barclays Bank PLC*, CFTC Docket No. 15-24, Order Instituting Proceedings (May 20, 2015).

and FCA imposed over \$3.2 billion in fines on Citi, HSBC, JPMorgan, RBS, and UBS for manipulating the FX market, the Office of the Comptroller of the Currency (“OCC”) fined Bank of America, Citi, and JPMorgan another \$950 million, and the Financial Market Supervisory Authority (“FINMA”) fined UBS \$141 million. Other authorities across the globe are also actively investigating Defendants’ manipulation of the FX market, including the U.S. Federal Reserve and the Securities Exchange Commission.

80. The settlements entered to date lay out the details of how Defendants colluded to manipulate FX prices to their benefit. For instance, the CFTC found that Citi, HSBC, JPMorgan, RBS, and UBS “used private electronic chat rooms to communicate and plan their attempts to manipulate the Forex benchmark prices.”²⁸ Defendants’ traders used those inter-bank chat rooms to “coordinate[] their trading with certain FX traders at other banks to attempt to manipulate certain FX benchmark rates,” and to “disclose[] confidential customer order information and trading positions, alter[] trading positions to accommodate the interests of the collective group, and agree[] on trading strategies as part of an effort by the group to attempt to manipulate certain FX benchmark rates.”²⁹ Those exclusive chatrooms were often given colorful names like “The Cartel,” “The Mafia,” “The Club,” “The Bandits’ Club,” “The Dream Team,” “One Team, One Dream,” and “The Sterling Lads.”³⁰

81. As discussed above, Defendants here engaged in similar practices in the analogous context of the SSA market. SSA traders employed by Defendants used the same types

²⁸ *In the Matter of Citibank, N.A.*, Order Instituting Proceedings, CFTC Dkt. No. 15-03 (Nov. 11, 2014).

²⁹ *Id.*

³⁰ *Id.*

of private electronic chat-rooms to communicate with their counterparts at other banks, including communicating the details about their clients' portfolios and orders.

C. Investigations into the Manipulation of ISDAfix

82. ISDAfix is another key interest-rate benchmark, designed to represent current market fixed rates for interest rate swaps of various terms.

83. In 2013, it was revealed that the CFTC,³¹ the U.K. Financial Conduct Authority,³² and the German financial regulator BaFin³³ were actively investigating the manipulation of ISDAfix rates.³⁴ The CFTC was reported to be sifting through over one million emails and instant messages, as it simultaneously interviewed current and former employees of banks and dealers as part of its ISDAfix investigation.³⁵

84. In 2014, *Bloomberg* reported that the CFTC had told the DOJ that it had “found evidence of criminal behavior following an investigation into banks’ alleged manipulation of

³¹ Matthew Leising, *CFTC Said to Subpoena ICAP Brokers, Dealers on Swap Prices*, Bloomberg (Apr. 8, 2013), at <http://www.bloomberg.com/news/articles/2013-04-08/cftc-said-to-probe-icap-treasure-island-brokers-on-swap-prices>.

³² Lindsay Fortado & Matthew Leising, *U.K. Regulator Said to Join CFTC in ISDAfix Manipulation Probe*, Bloomberg (Apr. 23, 2013), at <http://www.bloomberg.com/news/articles/2013-04-23/u-k-regulator-said-to-join-cftc-in-isdafix-manipulation-probe>

³³ Matthew Leising, *Libor Settlements Said to Ease CFTC Path in Rate-Swaps Probe*, Bloomberg (Aug. 7, 2013), at <http://www.bloomberg.com/news/articles/2013-08-06/libor-settlements-said-to-ease-cftc-s-path-in-rate-swaps-probe>.

³⁴ Matthew Leising, *CFTC Said to Subpoena ICAP Brokers, Dealers on Swap Prices*, Bloomberg (Apr. 8, 2013), at <http://www.bloomberg.com/news/articles/2013-04-08/cftc-said-to-probe-icap-treasure-island-brokers-on-swap-prices>.

³⁵ Matthew Leising, *CFTC Said Preparing ISDAfix Probe Talks in Weeks: Credit Markets*, Bloomberg (May 21, 2013), at <http://www.bloomberg.com/news/articles/2013-05-20/cftc-said-to-review-1-million-e-mails-in-isdafix-investigation>

ISDAfix[.]”³⁶ The article stated that the CFTC “has flagged its findings to prosecutors, according to a person familiar with the matter.”³⁷ This led the DOJ and other regulators to launch their own investigations.

85. In May 2015, Barclays reached an agreement with the CFTC to pay \$115 million for alleged manipulation of ISDAfix.³⁸ In May 2016, Citibank reached a similar agreement with the CFTC, agreeing to pay \$250 million for alleged manipulation of ISDAfix.³⁹ That same month, seven of the world’s largest banks—including Bank of America, Credit Suisse, and Deutsche Bank, Defendants this action—agreed to pay \$324 million to private antitrust claims alleging that they conspired to rig ISDAfix rates.⁴⁰

D. Investigations into the Rigging of Treasuries Auctions

86. On June 8, 2015, the New York Post first reported that the DOJ had begun an investigation into possible fraudulent manipulation of the Treasuries market.⁴¹ Two days later,

³⁶ Matthew Leising & Tom Schoenberg, *CFTC Said to Alert Justice Department of Criminal Rate Rigging*, Bloomberg (Sept. 9, 2014), at <http://www.bloomberg.com/news/articles/2014-09-08/cftc-said-to-alert-justice-department-of-criminal-rate-rigging-i2z7ngfn>.

³⁷ *Id.*

³⁸ CFTC Press Release, *CFTC Orders Barclays to Pay \$115 Million Penalty for Attempted Manipulation of and False Reporting of U.S. Dollar ISDAFIX Benchmark Swap Rates* (May 20, 2015), at <http://www.cftc.gov/PressRoom/PressReleases/pr7180-15>.

³⁹ CFTC Press Release, *CFTC Orders Citibank to Pay \$250 Million Penalty for Attempted Manipulation of and False Reporting of U.S. Dollar ISDAFIX Benchmark Swap Rates* (May 25, 2016), at <http://www.cftc.gov/PressRoom/PressReleases/pr7371-16>.

⁴⁰ Bob Van Voris, *Seven Banks to Pay \$324 Million to Resolve ISDAfix Claims*, Bloomberg, at <http://www.bloomberg.com/news/articles/2016-05-03/seven-banks-to-pay-324-million-to-resolve-isdafix-claims>

⁴¹ See Dugan, *supra*.

Bloomberg confirmed that to be the case,⁴² with subsequent reports revealing that “most or all” of the 22 primary dealers in U.S. Treasuries had received information requests from the DOJ’s fraud section.⁴³

87. The focus of the probe is reported to be the auction process, with Defendant Goldman Sachs recently confirming it received requests from regulators for information regarding “[t]he offering, auction, sales, trading and clearance of . . . government securities.”⁴⁴ Initial reports also state that the DOJ is modeling the Treasuries investigation on its successful examinations of the FX and other financial markets, including by inquiring whether inside information was shared improperly—*e.g.*, whether Defendants used electronic chat-rooms and similar means to coordinate their positions and exchange confidential customer information, just as they did in the FX and other markets.⁴⁵ Several people familiar with the Treasury auction process informed *Bloomberg* “traders at some of these dealers also have talked with counterparts at other banks via online chatrooms . . . with one of them adding that the traders swapped gossip about clients’ Treasury orders as recently as last year.”⁴⁶

⁴² Keri Geiger & Matthew Leising, *Treasuries Collusion Said to Be Hunted in New Wave of Probes*, *Bloomberg* (June 10, 2015), at <http://www.bloomberg.com/news/articles/2015-06-10/treasuries-collusion-said-to-be-hunted-in-next-wave-of-probes>.

⁴³ Keri Geiger & Alexandra Scaggs, *U.S. Probes Treasuries Niche That Investors Claim Is Rigged by Big Banks*, *Bloomberg* (Nov. 9, 2015), at <http://www.bloomberg.com/news/articles/2015-11-09/u-s-probes-treasuries-niche-that-some-investors-claim-is-rigged>.

⁴⁴ Goldman Sachs Group, Inc., *Quarterly Report on Form 10-Q for the Quarter Ended September 30, 2015*, at 95, at <https://www.sec.gov/Archives/edgar/data/886982/000119312515362853/d22013d10q.htm>.

⁴⁵ See Scaggs, Kruger and Geiger, *supra*.

⁴⁶ See *id.*

88. On September 9, 2015, the *Financial Times* and *Reuters* revealed that the New York Department of Financial Services (“DFS”) had joined the DOJ by commencing its own probe. DFS is reported to have sent letters to multiple banks—including Barclays, Defendant Deutsche, Goldman Sachs, Societe General, Defendant Credit Suisse, Bank of Nova Scotia, Mizuho, and BNP Paribas—seeking information on potential manipulation of U.S. Treasuries auctions.⁴⁷

89. The government investigations into banks’ SSA trading practices are just the latest in a long string of revelations about corruption in the financial system. With each passing scandal, it becomes clear that these are not isolated events, but rather that “cross-talk” on electronic platforms, to arrange manipulative trading strategies at key points in the day, was for years viewed as normal operating procedure by Defendants and others in the banking industry.

VI. ECONOMIC ANALYSIS CONFIRMS THAT DEFENDANTS CONSPIRED TO FIX SSA BOND PRICES

90. In a complaint filed on June 17, 2016, Plaintiffs in *Sheet Metal Workers Pension Plan of Northern California et al. v. Bank of America Corporation, et al.* (S.D.N.Y No. 1:16-cv-4603-ER) (the “Sheet Metal Plaintiffs”) provide an detailed economic analysis of the SSA bond market.

91. As has been well-documented by Congressional testimony and academic publications, “screens” are statistical tools based on economic models that use data such as prices, bids, quotes, spreads, market shares, and volumes to identify the existence, causes, and

⁴⁷ Karen Freifeld & Rachel Chitra, *New York seeks info from banks in Treasury auction probe*, *Reuters* (Sept. 9, 2015), at <http://www.reuters.com/article/2015/09/09/globalbanks-probe-idUSL4N11F48M20150909#IDXrxhEHgWrYeJJ5.97>; Gina Chon & Martin Arnold, *Watchdog in US Treasury market probe*, *Financial Times* (Sept. 9, 2015), at <http://www.ft.com/cms/s/0/fbb913c2-5650-11e5-a28b-50226830d644.html>.

scope of conspiratorial behavior. For instance, “screens” were part of an analysis that led to the discovery of the Libor rate-setting conspiracy that is still roiling the banking industry. In the context of Libor, journalists and economists uncovered anomalous behavior in the benchmark as compared to movements in other publicly available data points (data points that were independent of the banks’ purported individualized judgment).⁴⁸ Screens also led to the initial detection, in the summer of 2013, of the foreign exchange conspiracy, which resulted in over \$3 billion in settlements by banks in the United States, the United Kingdom, and Switzerland in November 2014.⁴⁹

92. It appears Sheet Metal Plaintiffs used screens to analyze historical trading data, including prices and bid-ask spreads, for the SSA bond market. They looked at several years’ worth of trading data for approximately one hundred bonds issued by nine bellwether, AAA-credit-rated SSA issuers: the International Bank for Reconstruction and Development (“IBRD”); the European Investment Bank (“EIB”); Germany’s KfW Development Bank (“KFW”); the African Development Bank (“AFDB”); the Asian Development Bank (“ASIA”); the Inter-American Development Bank (“IADB”), the International Finance Corporation (“IFC”); the Nordic Investment Bank (“NIB”); and Freddie Mac (“FHLMC”). Investors ran screens comparing this data to U.S. corporate bond spreads during the same historical period, using the MarketAxess Bid-Ask Spread Indexes (“BASI”), indices maintained by MarketAxess Research

⁴⁸ See generally Testimony of Rosa M. Abrantes-Metz on behalf of the Office of Enforcement Staff, Federal Energy Regulatory Commission (Sept. 22, 2014), at http://elibrary.ferc.gov/idmws/doc_info.asp?document_id=14274590.

⁴⁹ See Liam Vaughan and Gavin Finch, *Currency Spikes at 4 P.M. in London Provide Rigging Clues*, Bloomberg (Aug. 27, 2013), at <http://www.bloomberg.com/news/2013-08-27/currency-spikes-at-4-p-m-in-london-provide-rigging-clues.html>.

in several trade-size variations to tracks the daily spread differential between executed bids and offers for 1,000 of the most actively traded securities in the U.S. corporate bond market.

93. It appears from their Complaint that their analysis confirmed the presence of widespread, collusive behavior in the SSA market from at least January 2010 to November 2014.

94. First, bid-ask spreads were substantially higher in the SSA bond market than in the U.S. corporate bond market and largely tracked corporate bond spreads—spreads which historically were much higher than SSA bond spreads—until mid-November 2014, when they diverged from this pattern and broke to low levels at which they have remained, suggesting that the conspiracy artificially inflated SSA bond spreads.

95. Second, SSA bond spreads plummeted immediately on November 12, 2014, when the first FX settlements were announced, suggesting the Defendants abandoned their price-fixing and bid-rigging scheme.

96. Third, spreads became less correlated among different bonds after mid-November 2014, suggesting the weakening of coordination in spread-fixing across bonds.

97. Fourth, the day-over-day changes in spreads—i.e., their growth rates—also became significantly less correlated among SSA bonds after mid-November 2014.

98. Fifth, the SSA bond market exhibited striking shifts in predictability, volatility, and variability after November 2014, hallmarks of coordinated behavior. SSA bond prices were highly predictable until mid-November 2014, and have been significantly less so since then, despite higher levels of economic uncertainty in the period prior to November 2014, which normally would be expected to decrease rather than increase spreads' predictability. Despite reduced uncertainty in the economy since mid-November 2014, SSA bond prices also became significantly more volatile after mid-November 2014 and more responsive to contemporaneous

market conditions, again consistent with spread-fixing during the prior period. And bid-ask spreads on SSA bonds became significantly more variable over time after mid-November 2014, and less similar to each other across different bonds within institutions and across institutions. Each of these trends is the opposite of what one would expect to find in a non-collusive market, given the higher degree of economic uncertainty in the period before November 2014 than the period after.

99. Sixth, during the collusive period, spreads across all SSAs were more concentrated around the average spread, much more tightly than in the after collusive period.

100. Viewed in isolation, each of these patterns is indicative of collusion. Viewed together, the fact that these factors all simultaneously point in the same direction provides compelling, independent support for the existence of a conspiracy to fix SSA bond spreads.

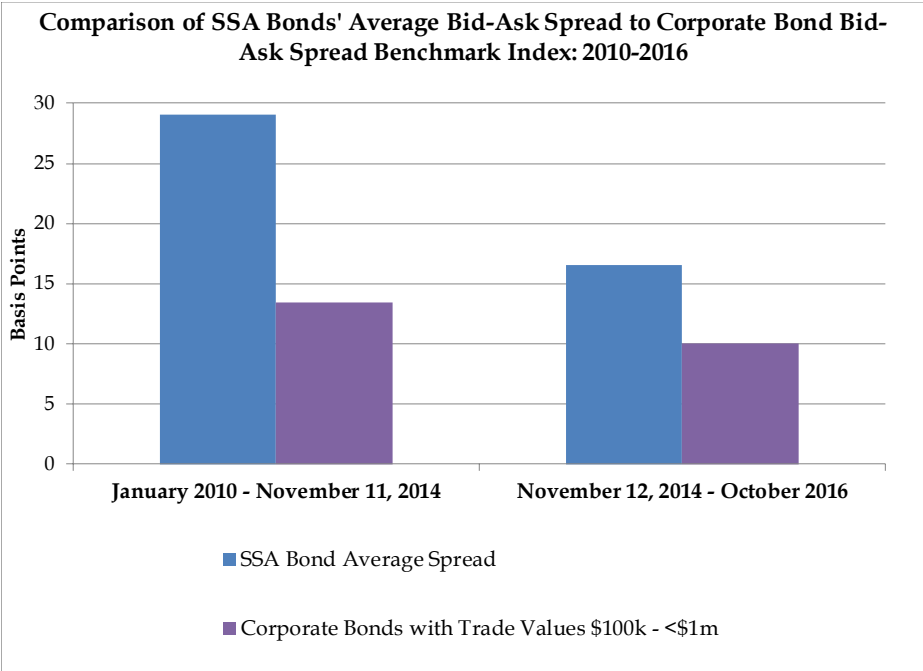
A. SSA Bond Spreads Were Artificially Inflated Relative to U.S. Corporate Bond Spreads Until November 12, 2014

101. It appears that Sheet Metal Plaintiffs compared the historical data on bid-ask spreads in the SSA bond market (“SSA spreads”) and bid-ask spreads in the U.S. corporate bond market (“corporate spreads”) from 2010 to 2015 to determine whether SSA spreads behaved in ways that cannot be attributed to normal market factors over this timeframe. Because SSA bonds and corporate bonds are largely influenced by the same market fundamentals, a significant change in SSA spreads that is not observed in corporate spreads suggests the presence of an unexplained factor, separate from natural market phenomena, that is driving an artificial change in SSA bond spreads. For this analysis, it appears that Sheet Metal Plaintiffs looked at the daily average bid-ask spreads for all of the individual SSA bonds studied, and compared them against the BASI spreads for corporate bonds in two categories of trade-values: (1) corporate bonds with

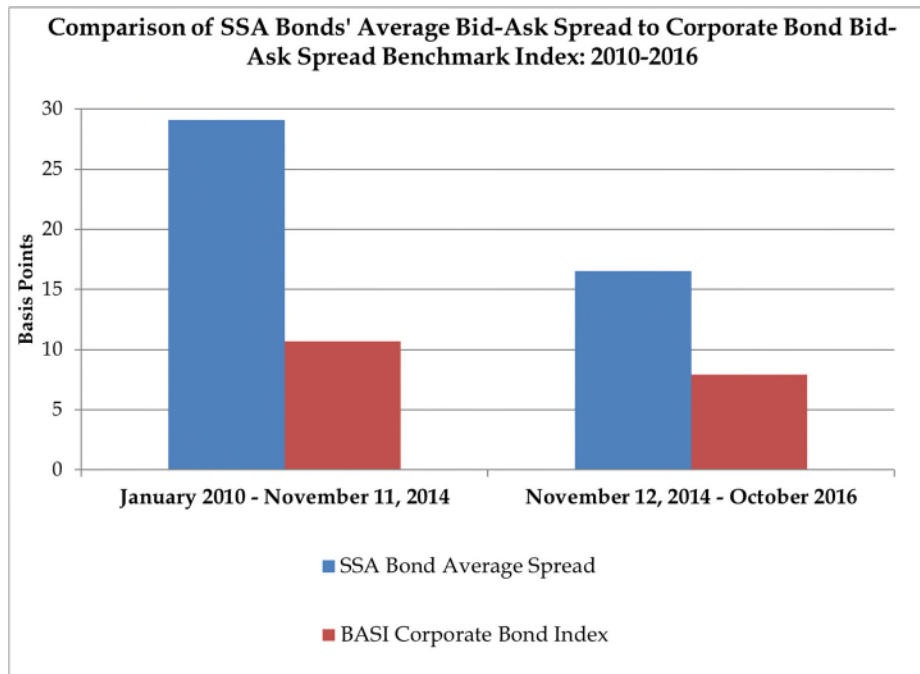
notional trade values of between \$100,000 and \$1 million; and (2) corporate bonds of all trade values.

102. From January 2010 through most of 2014, SSA spreads were substantially higher than corporate bond spreads, with spreads in both markets generally following parallel trend-lines. This relationship remained stable until the first FX settlements were announced, on November 12, 2014, consistent with the end of Defendants' conspiracy. At that point, the relationship broke down, as SSA spreads decreased sharply relative to corporate spreads, remaining flat while corporate spreads increased. The relative decline in SSA spreads against corporate spreads is consistent with a change in behavior by SSA traders in response to increased enforcement against banks for conspiring in the foreign exchange market—specifically, a decision by SSA traders, who had been communicating with each other over SSA bond prices, to become more cautious in their communications after chat room transcripts were published in connection with the first FX settlements on November 12, 2014.

103. The decline in SSA spreads is statistically significant when measured against the spreads of corporate bonds from each of the BASI trade-value buckets. The following chart shows the difference between SSA spreads and corporate spreads—in other words, the spread of both spreads—for trades with notional values between \$100,000 and \$1 million. Between January 2010 and November 11, 2014, the mean difference between these spreads was 15.65; from November 12, 2014 onward, the mean difference was 6.49 basis points, a statistically significant drop.

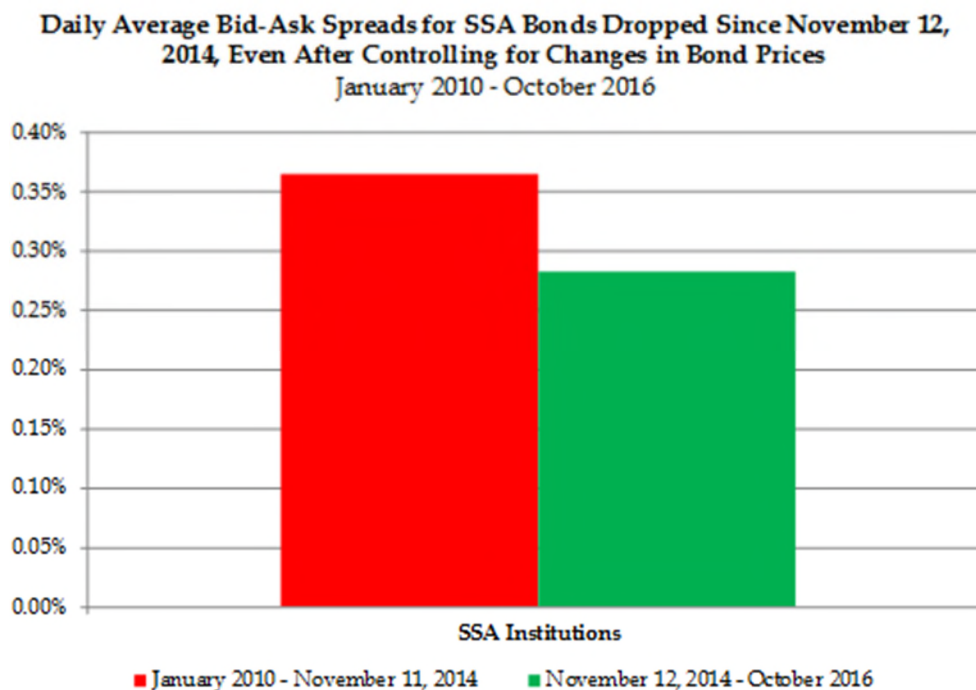


104. And the following chart shows the difference in the daily average between SSA spreads and spreads for corporate bonds of *all* liquidity levels. Between January 2010 and November 11, 2014, the mean difference in SSA bond spreads and corporate bond spreads for all liquidity levels was 18.40 basis points; from November 12, 2014 onward, the mean difference was cut by more than half, to 8.61 basis points. Again, this decline is statistically significant.

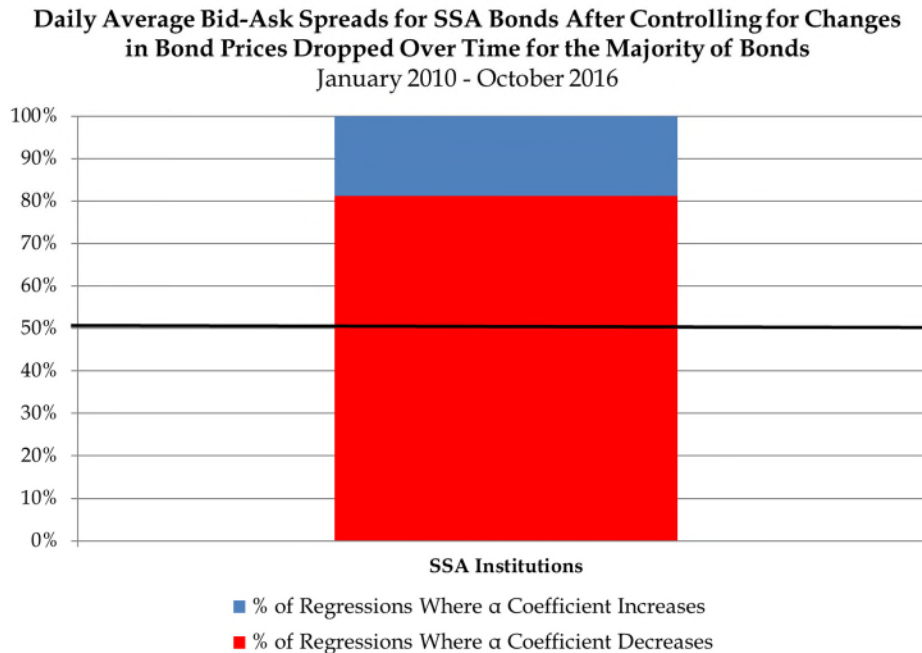


105. Even taking into account the movements of the SSA market overall, and the changing price of bonds, SSA spreads were still much lower after November 2014 than before. Other things being equal, the bid-ask spreads tend to increase with higher price volatility as a reflection of increased uncertainty regarding the underlying value of a security. The decline in SSA spreads from November 12, 2014 through October 2016 cannot be explained away by declines in the volatility in SSA bond prices. It appears that Sheet Metal Plaintiffs performed a regression analysis to test whether SSA spreads had been reduced since mid-November 2014, even after extracting away the effect of price variation. “Regression analysis” is a statistical method that can be used to determine how much the movement of one measured variable can be explained by the movement of another. Sheet Metal Plaintiffs purportedly found that even after controlling for price changes in the underlying bonds, there was an unexplained, statistically significant difference between the daily average spreads of SSA bonds in the periods before and after November 11, 2014.

106. This finding is demonstrated in the following chart, which shows that, after controlling for the effect of underlying bond price movements on SSA spreads, average SSA spreads shrank by several basis points after November 11, 2014. The average SSA bond spreads for January 2010 to November 11, 2014 are shown in red, while the average spreads after November 11, 2014 are shown in green.



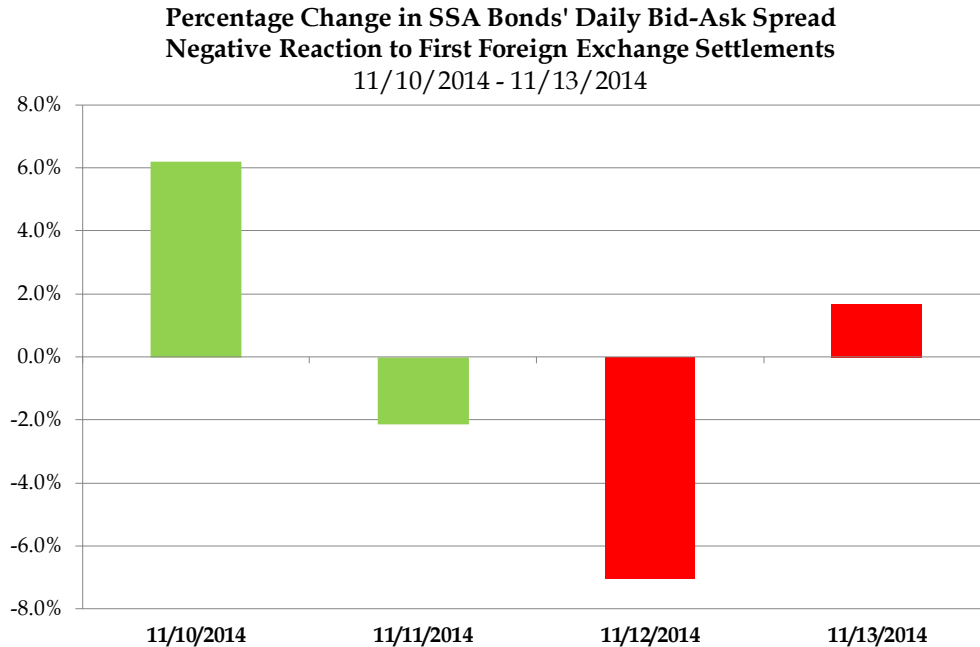
107. In addition, again controlling for decreases in underlying bond prices, the vast majority of SSA bonds experienced spread decreases after November 11, 2014. The following chart shows the percentage of bonds for which average spreads decreased in red, and the percentage of bonds for which average spreads increased in blue. Therefore, SSA spreads after controlling for bond prices did not just decrease on average across all bonds, but also decreased for more than 80% of the bonds studied.



B. SSA Bond Spreads Plummeted Immediately When the First FX Settlements Were Announced on November 12, 2014

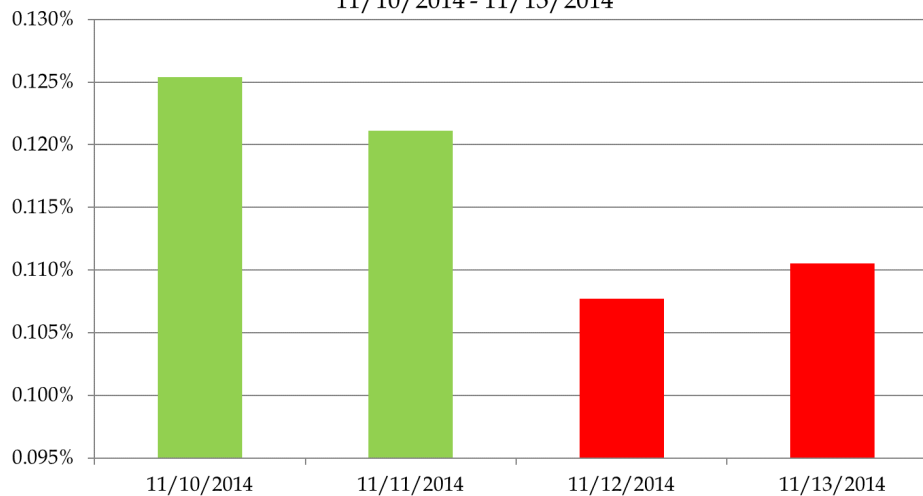
108. Sheet Metal Plaintiffs also examined the historical data on SSA spreads over the several days before and after the first FX settlement announcements. They found that SSA spreads plummeted *immediately* when the announcements were made.

109. The chart below plots the percentage changes, from one day to the next, in the bid-ask spreads of the SSA bonds studied by Sheet Metal Plaintiffs over the several days immediately preceding and following the first announcements of FX settlements. The chart shows that SSA spreads experienced a dramatic decline on November 12, 2014, with a greater magnitude than any of the spread movements on the preceding days.



110. As a check, Sheet Metal Plaintiffs allegedly compared the movement in SSA spreads in this timeframe against movements in corporate spreads, using the BASI index for corporate bond spreads. The following chart compares the differences between SSA spreads and corporate spreads, thus controlling for market movements in the underlying prices. Even then, the sharp decline in SSA spreads on November 12, 2014 is visible, with the difference between the two remaining significantly lower on November 13 as well.

**The Difference Between SSA Bonds' Spreads With Respect to the BASI
Corporate Bond Bid-Ask Spread Index Was Reduced With the First Foreign
Exchange Settlements**
11/10/2014 - 11/13/2014



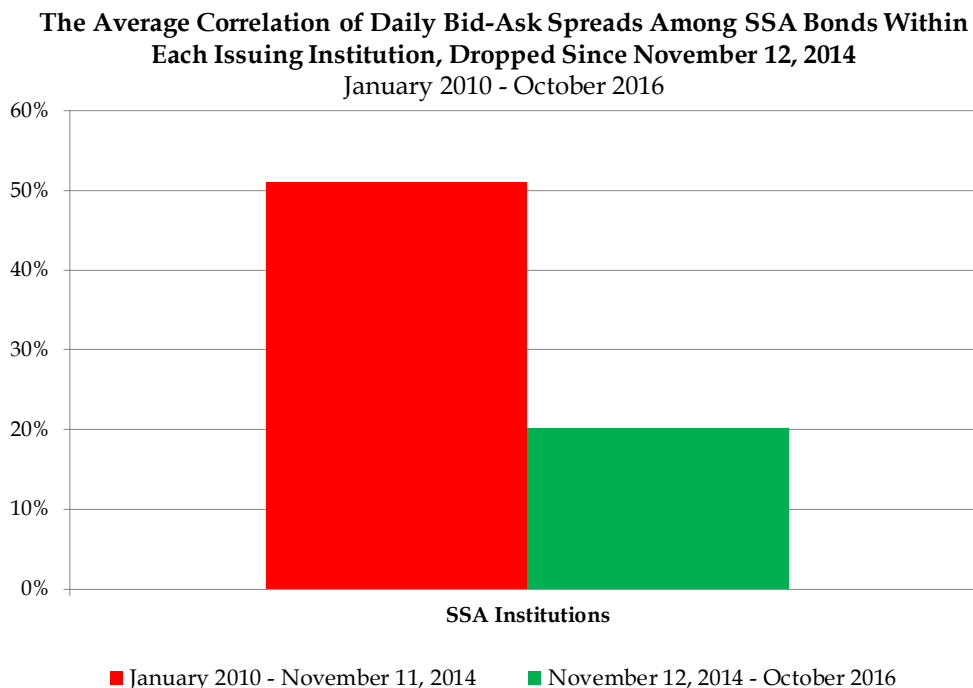
111. The drop in SSA spreads on November 12 and 13, 2014 suggests that there was an abrupt and dramatic change in the behavior of SSA bond traders on the same day the FX settlements were announced. This shift is a telltale marker of a break in a conspiracy that, as discussed below, is supported by numerous other statistically significant patterns in the historical trading data.

C. Bid-Ask Spreads for SSA Bonds Became Less Correlated Among Different Bonds After the First FX Settlements Were Announced

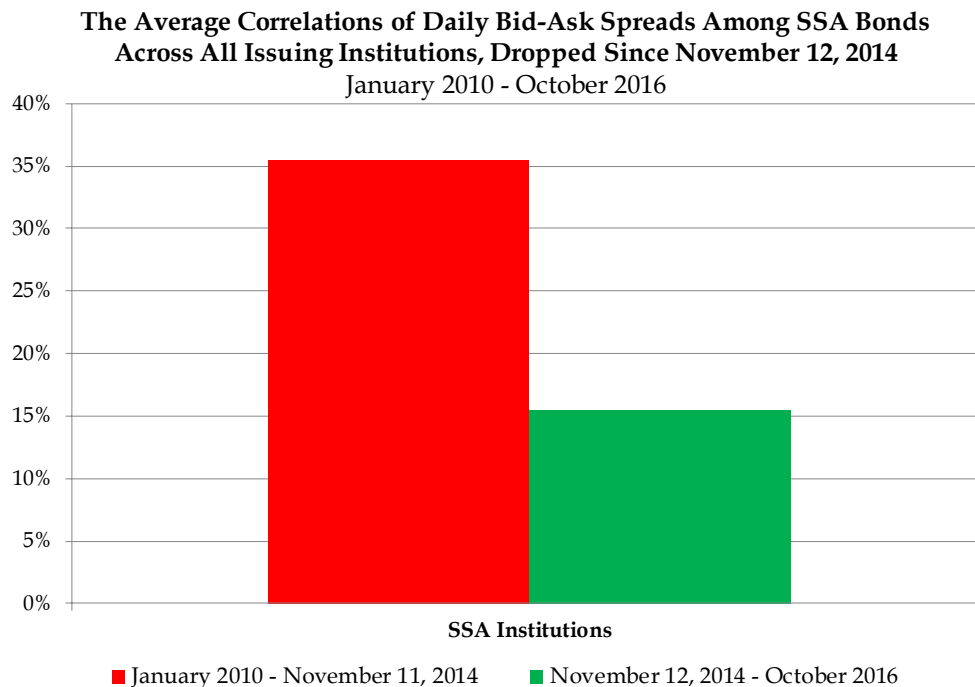
112. When market players conspire, they coordinate their actions. This coordination of actions—here, the coordination of spreads in SSA trades—is expected to increase correlation across the measures subject to coordination (here, SSA spreads), and the relationship between one SSA spread to another becomes greater. In other words, conspiratorial bids and asks would be more highly correlated than non-conspiratorial bids and asks because of the additional factor affecting spread movements across all bonds: coordination. A high degree of correlation means that prices, or, in this case, spreads, move closely together.

113. It appears that Sheet Metal Plaintiffs analyzed the correlations of SSA bid-ask spreads, or how closely those spreads moved together over time, as measured by their correlations. They purportedly found that spread correlations fell sharply after the first FX settlements were announced. As with the patterns above, this pattern is consistent with a conspiracy to manipulate SSA bond prices: correlations among spreads are expected to be higher in a conspiratorial market than in a competitive market, because of the coordinated manipulation of spreads by members of the conspiracy.

114. The chart below shows the average correlation of daily SSA spreads within each issuing institution—*i.e.*, how closely the spreads for each bond moved on a daily basis in relation to the spreads for all bonds issued by the same issuing institution. The chart shows that the spreads were more highly correlated from January 2010 to November 11, 2014 than they were from November 12, 2014 through October 2016, consistent with a clear break in the coordination of spreads across bonds since then.



115. The same pattern appears with respect to correlations among spreads *across* all issuing institutions—*i.e.*, how closely the spreads for each bond moved on a daily basis in relation to the spreads for all bonds issued by all of the nine SSA institutions studied by Sheet Metal Plaintiffs.



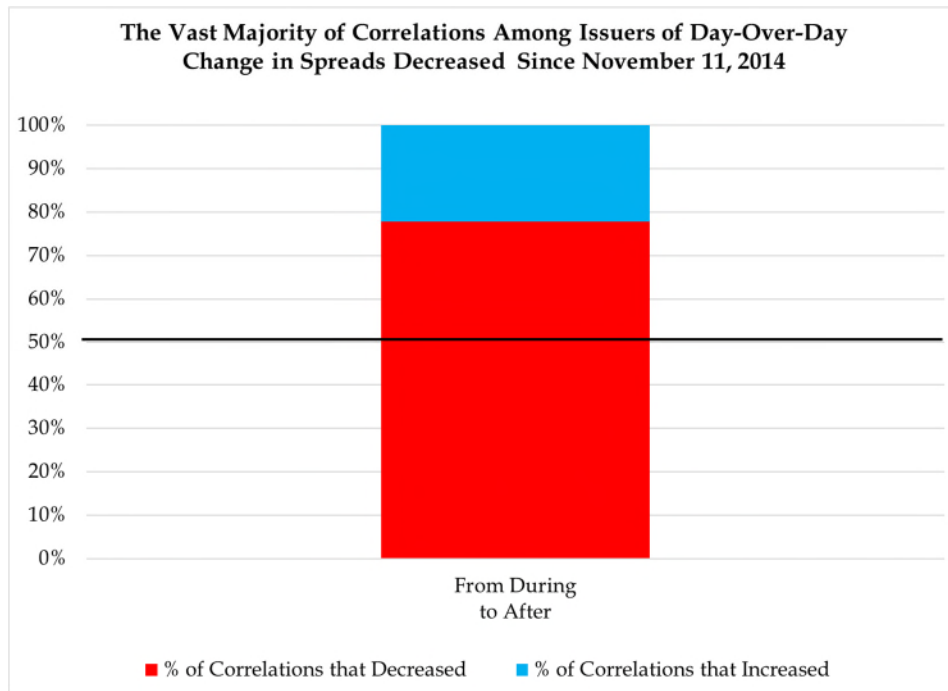
D. Day-to-Day Changes of Bid-Ask Spreads for SSA Bonds Became Less Correlated After the First FX Settlements Were Announced

116. Not only did the levels of SSA spreads become less correlated after November 2014, but so did the degree to which SSA spreads changed from one day to the next. Using data on intraday bid-ask spreads over a six-year period, Sheet Metal Plaintiffs allegedly calculated the average spread for all the bonds of each issuer on each day. Sheet Metal Plaintiffs then purportedly calculated the day-over-day percentage changes of these average daily spreads for each issuer. Finally, it appears that Sheet Metal Plaintiffs calculated the correlations among each issuer's average daily spread-changes, expressed as a correlation coefficient for each issuer. In other words, it appears Sheet Metal Plaintiffs studied whether changes in the size of the spread in

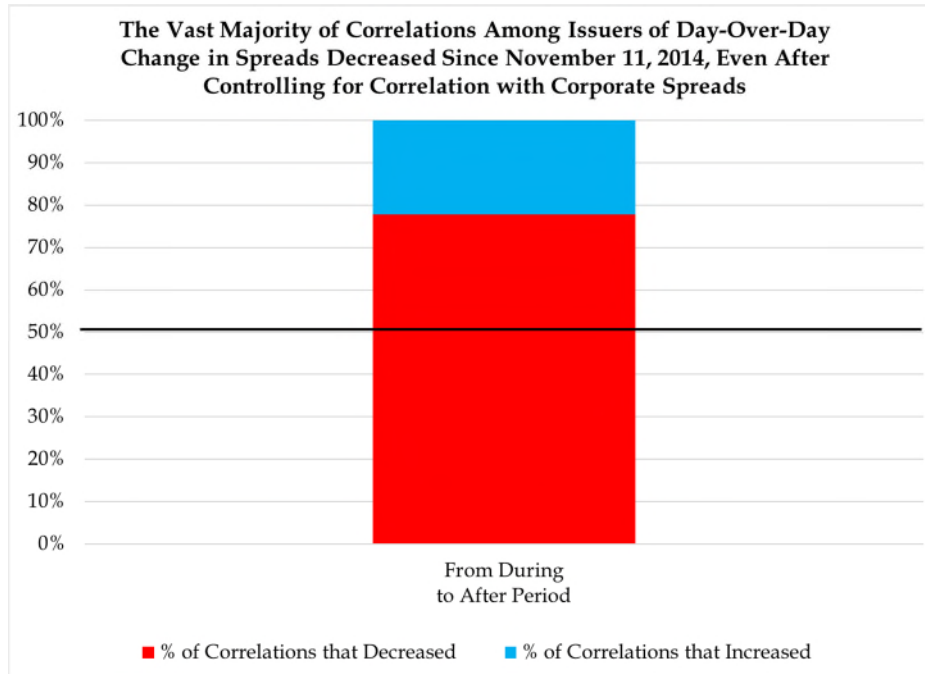
one SSA bond from one day to the next were mirrored by changes in the size of the spread in another SSA bond over those same two days. This process was repeated for all potential bond pairings, across every day, for the six-year study period.”

117. It appears that Sheet Metal Plaintiffs found that the average correlation among changes in SSA Spreads decreased by a factor of five since November 12, 2014, compared to the period from January 2010 through November 11, 2014. Thus, not only were the levels of spreads more highly correlated prior to November 12, 2014, but so were their growth rates, too. These patterns reflect the very tight coordination in movements across all of these bonds during that time period, consistent with a spread-fixing conspiracy.

118. To confirm that the severe drop in the “average” correlation was not the result of a few outlier relationships, but rather is a fair depiction of a fundamental change in the SSA market around November 2014, Sheet Metal Plaintiffs also analyzed *how many* bonds had their correlation coefficients decrease before and after the break, versus *how many* had their correlation coefficients increase before and after the break. As seen in the chart below, the vast majority of the SSA bonds studied—nearly 80%—saw a reduction in the relationship between that bond’s daily spread changes, and those for other SSA bonds.



119. The same patterns persist even when spread-changes in the broader bond market are taken into account. It appears that Sheet Metal Plaintiffs re-calculated the correlations among each issuer's average daily spread-changes using the BASI to control for prevailing trends in spread-changes over time. Using regression analysis, Sheet Metal Plaintiffs were able to isolate abnormal daily changes in SSA spreads by factoring out the amount of spread-change that would be expected based on the corresponding daily change in the BASI. Even after controlling for changes in corporate bond spreads, daily day changes in SSA spreads were much more correlated between January 2010 and November 2014 than they were after November 2014, and the total *number* of bonds whose correlation coefficients were larger in the period following November 2014 than they were from January 2010 to November 2014 remained approximately 80%.



120. In each instance, it appears that Sheet Metal Plaintiffs' analysis shows a high degree of correlation in the way SSA spreads changed from one day to the next from January 2010 until November 2014, and a sharp decline in correlation afterward.

E. The SSA bond market exhibited striking changes in the predictability, volatility, and variability of prices and spreads after November 2014

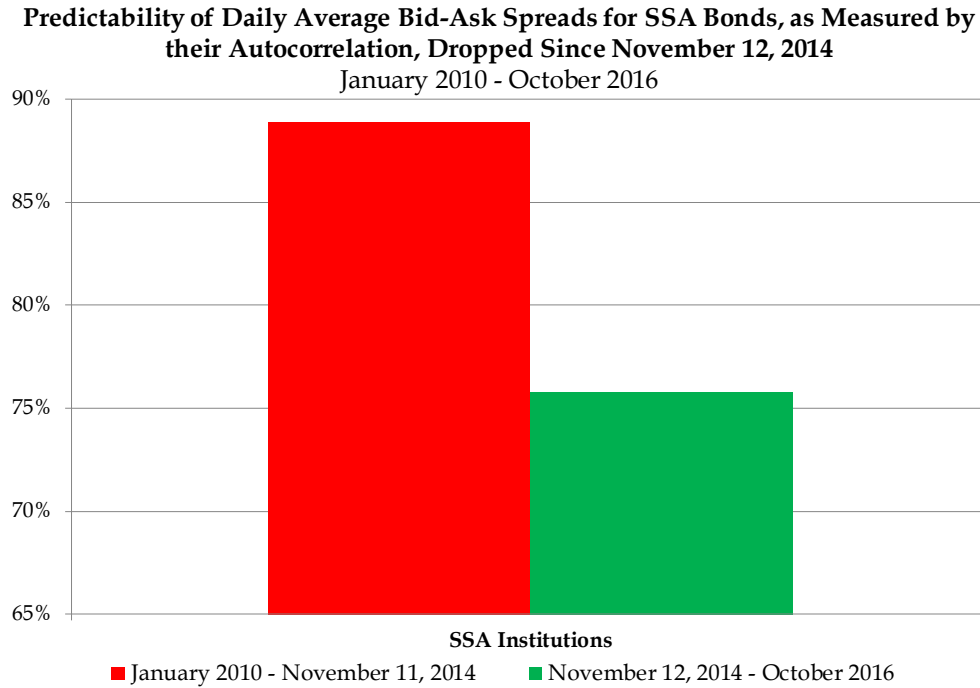
121. Sheet Metal Plaintiffs' analysis also shows striking shifts in predictability, volatility, and variability of prices and spreads in the SSA bond market after November 2014. Sheet Metal Plaintiffs purportedly found that: (1) SSA bond prices were highly predictable until mid-November 2014, and significantly less so since then; (2) SSA bond prices became much more volatile over time and more responsive to contemporaneous market conditions after mid-November 2014; and (3) bid-ask spreads on SSA bonds became significantly more variable, and less similar (or less clustered) to each other across different bonds on any given day, after mid-November 2014. Each of these shifts is indicative of a break in collusive conduct in mid-November 2014.

1. The predictability of bid-ask spreads for SSA bonds declined after the first FX settlements were announced

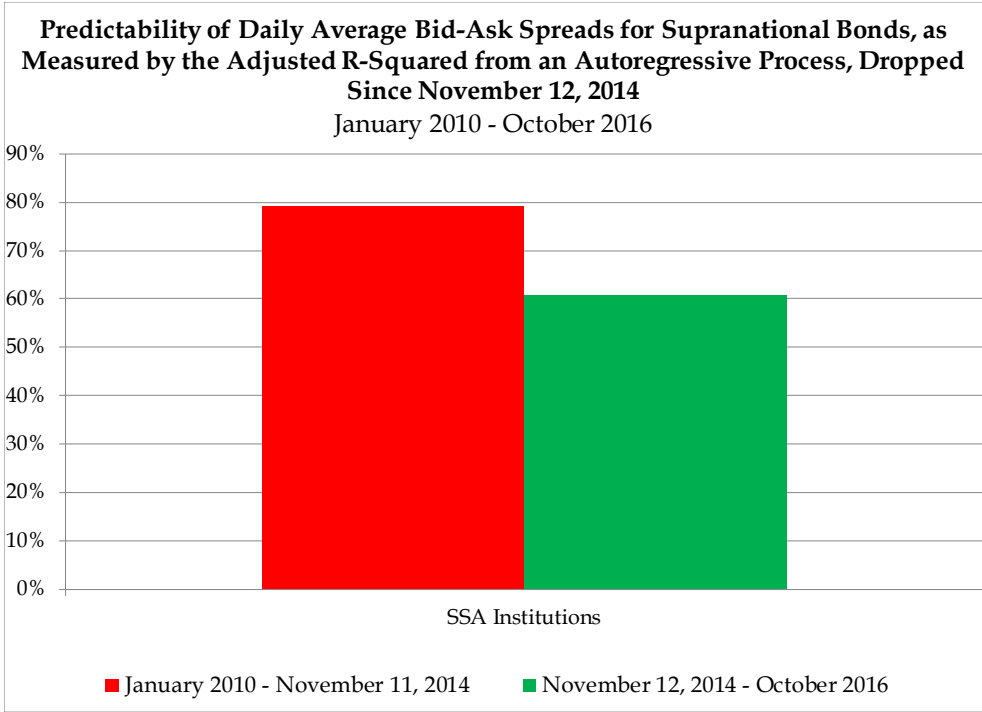
122. Until November 2014, the primary factor that determined the spread of SSA bonds on any given day was the size of the spread on the previous day of trading. This is consistent with a high level of predictability resulting from conspiratorial spread-fixing. Over time, in a competitive market, spreads would be expected to be less predictable than in a market affected by a conspiracy to fix spreads. Spreads that are set artificially by conspirators are less capable of responding to contemporaneous market conditions. If spreads are “fixed,” it becomes easier to predict what the spread will be tomorrow using only today’s spreads as a guide.

123. Sheet Metal Plaintiffs performed a regression analysis to identify the correlation between the spreads of SSA bonds with their spread on the previous day of trading. They allegedly found that, despite higher market volatility, SSA spreads were highly predictable until mid-November 2014, after which the predictability of SSA spreads sharply declined, a signal that spreads became more responsive to other contemporaneous market conditions and less determined by their (fixed) value from the previous day.

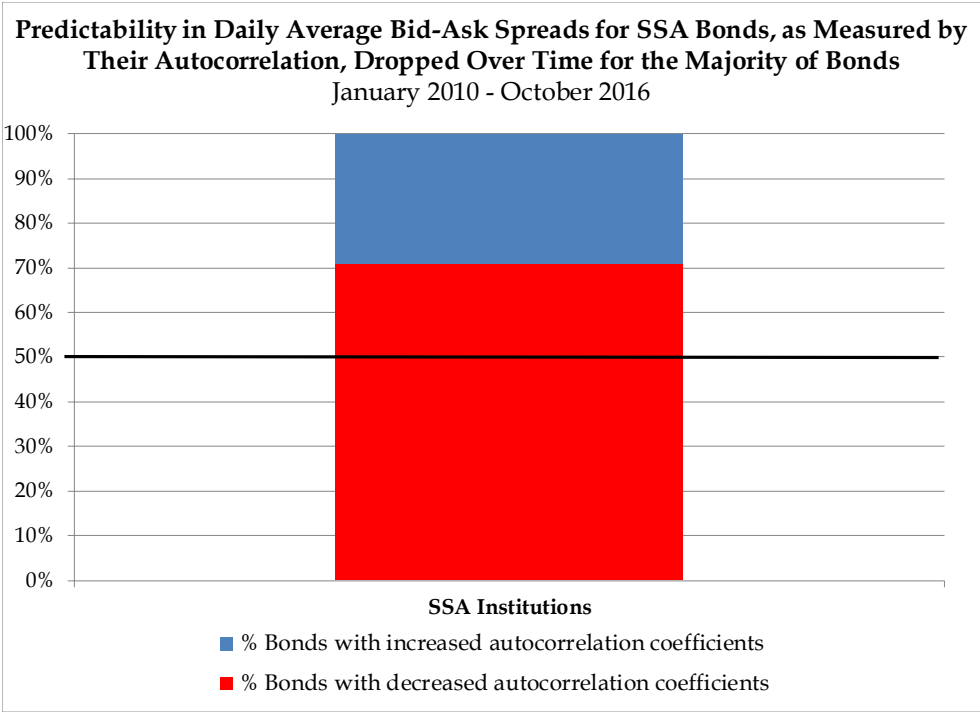
124. The following chart measures the predictability of SSA spreads by showing the correlation of the size of spreads on one day to their size on the previous day. The predictability of spreads from January 2010 to November 11, 2014 is shown in red, and the predictability of spreads from November 12, 2014 through October 2016 onward is shown in green. As the chart shows, before the FX settlements were announced on November 12, 2014, the correlation between SSA bond spreads from one day to the next was over 88.9%. From November 12, 2014 through October 2016, however, the predictability of spreads dropped to 75.7%.



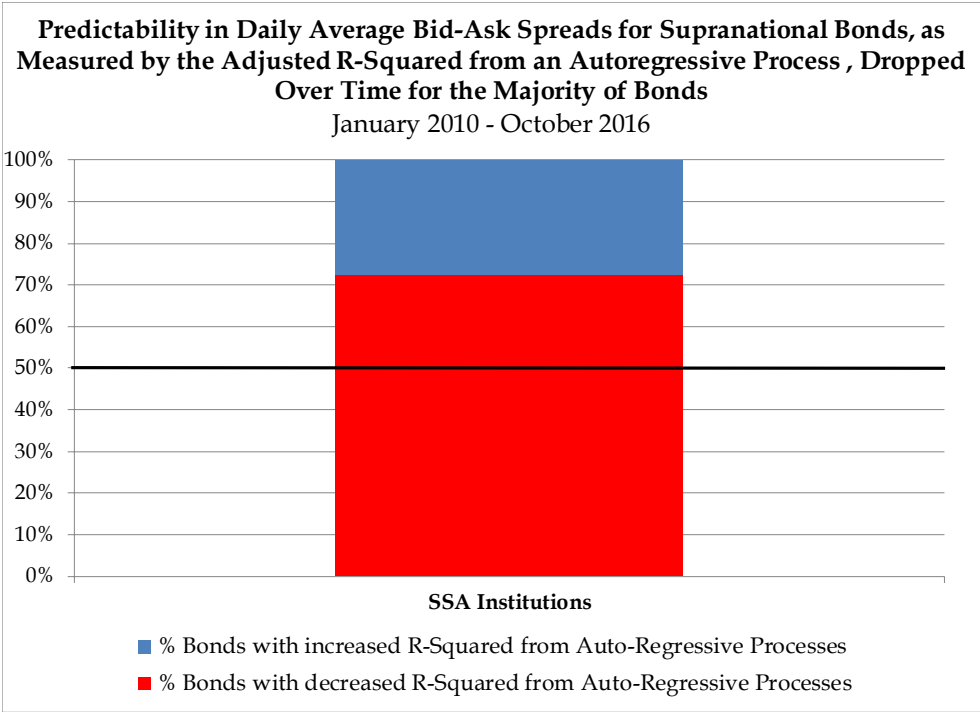
125. The same results were obtained when predictability was measured by the “adjusted R-squared”(a common measure of the “goodness of fit” of a regression). The following chart shows the adjusted R-squared predictability of SSA spreads for the same periods as the previous chart. Again, the chart shows that, beginning in mid-November 2014, spreads became significantly more responsive to market conditions other than the size of the previous day’s spreads. From January 2010 to November 11, 2014, 79.1% of the variation in SSA bid-ask spreads could be explained by the previous day’s spread. From November 12, 2014 through October 2016, that number declined to 60.6%.



126. The decline in the overall predictability of SSA spreads is not attributable to the outsize influence of a minority of bonds. The following chart shows the percentage of individual SSA bonds whose autocorrelation coefficients increased and decreased from mid-November 2014 onward, with decreases in red and increases in blue. The chart demonstrates that the predictability of spreads decreased for more than 71% of the SSA studied by the Sheet Metal Plaintiffs. The decline in the predictability of SSA spreads thus was highly consistent across all bonds.



127. The same results were obtained when predictability was measured by the adjusted R-squared.



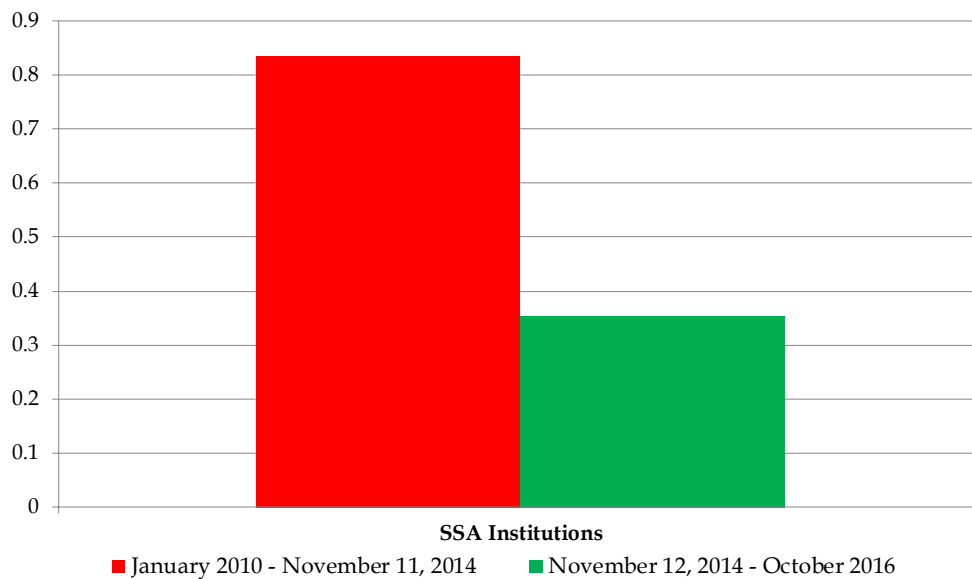
128. The high degree of predictability in SSA spreads prior to mid-November 2014, and the low degree of predictability since then, when the market was calmer and more liquid, provides additional confirmation that SSA traders were engaging in conspiratorial conduct during the first period and abandoned it in the second period.

2. The price return volatility of SSA bonds declined after the first FX settlements were announced

129. In a spread-fixing conspiracy, dealers will quote artificially high ask prices when they are selling and artificially low bid prices when they are buying. Accordingly, when dealers are selling, actual transaction prices are artificially high; when they are buying, actual transaction prices are artificially low. Because dealers buy and sell securities with almost the same frequency, prices in actual trades will bounce between artificially high asks and artificially low bids, inducing higher price volatility than would be present absent the conspiracy.

130. It appears Sheet Metal Plaintiffs measured the relative volatility of SSA bond price returns by comparing the price return volatility of the SSA bonds studied by Plaintiff against the price return volatility of the Bloomberg U.S. Corporate Bond Index, a good proxy for how liquid bond markets should function. As the chart below shows, the volatility of SSA bonds relative to corporate bonds fell substantially from mid-November 2014 onward.

**Price Return Volatility for SSA Bonds Relative to Price Return Volatility for
Bloomberg US Corporate Bond Index Dropped Since November 12, 2014**
January 2010 - October 2016



131. The decrease in price return volatility for SSA bonds beginning in mid-November 2014 is yet another factor supporting the presence of a structural change in the SSA market at that time due to a break in SSA spread-fixing.

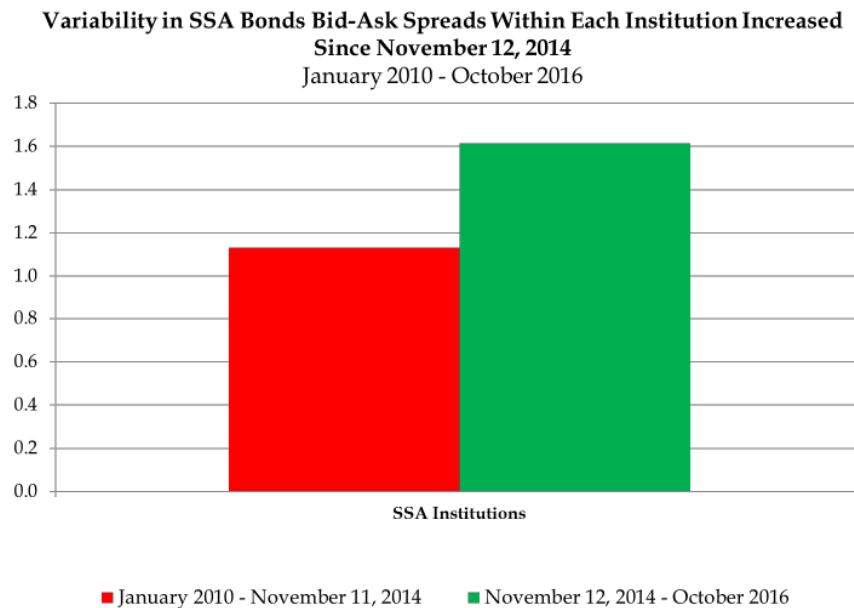
3. Bid-ask spreads for SSA bonds became more variable after mid-November 2014

132. Evidence that banks were, in fact, charging similar prices in the same market can show that there was an agreement among the banks to charge similar prices. Such evidence is particularly compelling in highly complex and fast-moving markets, where it is very unlikely that multiple market participants will charge the same prices, time after time.

133. A statistical measure of how “alike” numbers are in a given data-set is “variability,” as measured by the coefficient of variation of the numbers. Over time, bid-ask spreads should be more variable (or have a greater “time series variability”) in a competitive market than in a conspiratorial market that aims at artificially fixing these spreads, especially when uncertainty levels decrease. Using screens, Sheet Metal Plaintiffs found that SSA spreads

became more variable over time after mid-November 2014, even though in that same period liquidity increased and counterparty risk decreased, which would be expected to induce lower rather higher variability in spreads.

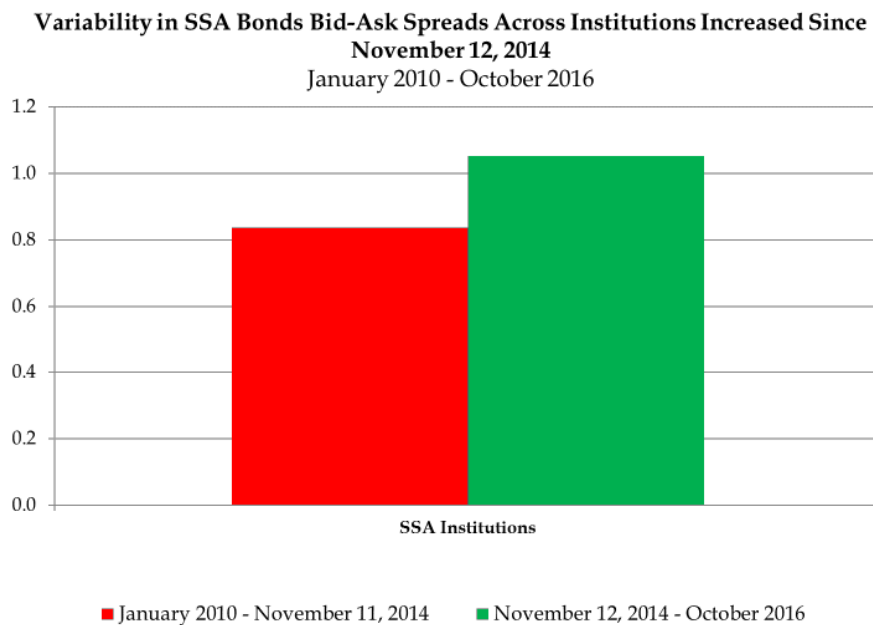
134. The following chart compares the variability over time of daily SSA spreads within each issuing institution—*i.e.*, how much spreads for the bonds of each institution were different from each other on any given day before and after mid-November 2014. The chart shows that SSA spreads for each institution were less variable over time from January 2010 to November 11, 2014 than they were from November 12, 2014 through October 2016, despite the fact that volatility and economic uncertainty decreased in the latter period. Hence, from January 2010 to November 11, 2014, the variability of SSA spreads moved in the opposite direction of what would normally be expected, consistent with a conspiracy to fix spreads in that period.



135. Just as variability can be measured for each institution's bonds over time, it can also be calculated across bonds for all institutions at each moment in time. Sheet Metal Plaintiffs performed these calculations in order to measure the similarity of SSA spreads across all issuers. Prior to mid-November 2014, liquidity was lower and uncertainty was higher than in the period

following mid-November 2014. Therefore, SSA bond spreads across issuers should have been more dispersed, or variable, in the period before mid-November 2014 than they were after mid-November 2014, when liquidity was higher and uncertainty was lower. But the exact opposite happened: SSA bond spreads were more clustered around each other (and hence more alike, or less dispersed or variable) on a daily basis before mid-November 2014 than after. This is additional evidence consistent with the coordination of SSA spreads prior to mid-November 2014.

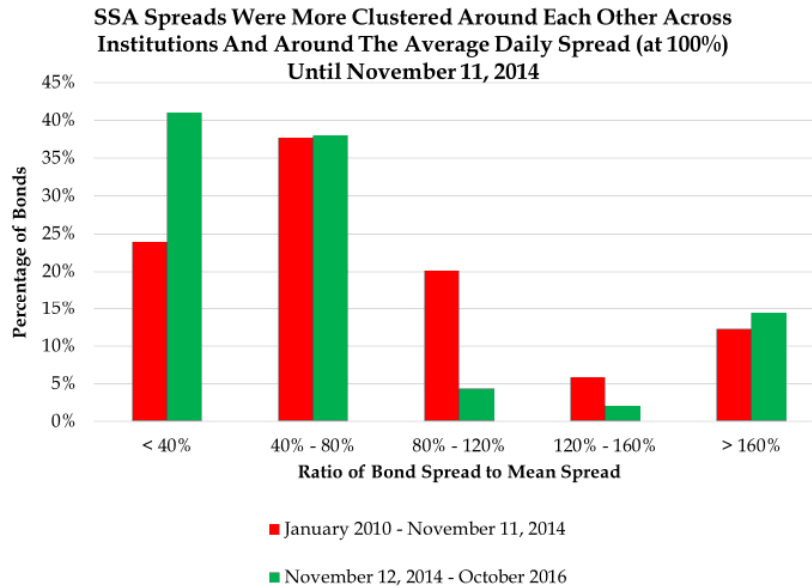
136. The chart below measures the variability for bonds across all issuing institutions. The higher the bars in the chart, the less similar to each other spreads were across institutions (meaning, the more variable or less clustered these spreads are around each other). As the chart shows, spreads were more clustered around similar values before mid-November 2014 (displayed in the lower red bar), than in the period after mid-November 2014 (displayed in the higher green bar), again consistent with the existence of a conspiracy to fix spreads.



F. During the Collusion Period, Spreads Across All SSAs Were More Concentrated Around the Average Spread, Whereas After the Collusion Period They Were Much Less Concentrated Around the Average Spread

137. Another measurement of the difference in prices between the collusive and competitive periods is the extent to which SSA spreads are concentrated around the average spread. Sheet Metal Plaintiffs measured the ratio of each bond's spread to the average spread for all SSA bonds (or each bond's "spread-ratio"). A spread-ratio of 100% indicates that a bond's spread is identical to the average spread for all SSA bonds on the same day. A spread-ratio greater than 100% indicates that a bond's spread is wider than the average spread for all SSA bonds on the same day. A spread-ratio lower than 100% indicates that a bond's spread is tighter than the average spread for all SSA bonds with the period.

138. The chart below shows the distribution of spread-ratios in the periods running from January 2010 to November 11, 2014 (in red) and November 12, 2014 through October 2016 (in green). The red bar is more than three times taller than the green for the 80%-120% grouping, which means that three times as many bonds were clustered around the average spread ratio (100% of the average) during the conspiracy period versus after. The green bars are higher on the outlier measurements, indicating that after the conspiracy broke, far more often a bonds' bid-ask spread was far below the average SSA bond spread (less than 40% of the average) or far above the average (more than 160% of the average), than what was observed during the conspiracy period. In other words, spreads were significantly more similar to each other in the earlier period than during the later period.



G. The Evidence of Collusion Established by This Analysis Is Confirmed by Comparison to Known Instances of Wrongdoing

139. To confirm the reliability of the Sheet Metal Plaintiffs’ analysis of the SSA bond market, Sheet Metal Plaintiffs applied the same analysis to a market in which traders are known to have engaged in collusive behavior: the Nasdaq market of May-June 1994. On May 27, 1994, two economists published a study of Nasdaq pricing patterns showing that dealers were quoting many of the most-heavily traded stocks only at even-eighths of a dollar (for example, 2/8th, or \$0.25), and not at odd-eighths (for example, 3/8th, or \$0.375)—a phenomenon the authors termed “odd-eighths avoidance.”⁵⁰ Immediately after the study was published, dealers began to quote the same stocks at both even- and odd-eighths, causing bid-ask spreads to narrow. This sudden break in market patterns sparked a DOJ investigation, SEC rule changes and nearly a billion dollars in settlement of civil lawsuits.

⁵⁰ See William Christie and Paul Schultz, *Why Do NASDAQ Market Makers Avoid Odd-Eighths Quotes?*, Journal of Finance, 49(5), 1813-1840 (1994). See also *Collusion in the stock market: Now that its price-fixing scandal has been laid to rest, has Nasdaq become a more efficient equity market?*, The Economist, <http://www.economist.com/node/111273>.

140. Sheet Metal Plaintiffs ran screens to identify the observable differences in Nasdaq intraday spreads for the days surrounding the break in the conspiracy: (1) from May 24, 1994 to May 26, 1994, a “collusive” period immediately preceding the publication of the “odd-eights avoidance” study; and (2) from May 28, 1994 to June 2, 1994, a “competitive” period immediately following the study’s publication. They ran screens on intraday spreads data for four of the largest stocks that were manipulated during the Nasdaq conspiracy: Apple Inc. (AAPL), Amgen Inc. (AMGN), Cisco Systems, Inc. (CSCO), and Microsoft Corp. (MSFT). These screens revealed the very same patterns that Sheet metal Plaintiffs identified in the SSA bond market.

141. First, daily average bid-ask spreads for each of the four stocks dropped substantially with the break of the conspiracy. Charts showing this pattern are included herein as Figures 1.A through 1.D of the Appendix to this Complaint. This pattern mirrors the pattern identified in the chart at paragraph 109 and 110 above.

142. Second, the correlations among the bid ask spreads for the four stocks dropped sharply along with the break in the Nasdaq conspiracy. A chart showing this pattern is included herein as Figure 2 of the Appendix to this Complaint. This pattern mirrors the pattern identified in the chart at paragraph 114 above.

143. Third, spreads of the four Nasdaq stocks, as measured by their autocorrelation and R-squared, also decreased after the break in the conspiracy, despite the fact that intraday data (as used in the Nasdaq conspiracy) is noisier than daily data (used in the comparable SSA analysis). Charts showing these patterns are included Figures 3 and 4 of the Appendix to this Complaint. These patterns mirror the patterns identified in the charts above at paragraphs 124 and 125 above.

144. Fourth, the price-return volatility for the four stocks dropped significantly when the odd-eighths study was published. A chart showing this pattern is included herein as Figure 5 of the Appendix to this Complaint. This pattern mirrors the pattern identified in the chart at paragraph 130 above.

145. Fifth, spreads for each of the four Nasdaq stocks became much more variable after the study was published than they were before. A chart showing this pattern is included herein as Figure 6 of the Appendix to the Complaint. This pattern mirrors the pattern identified in the charts at paragraph 134 and 136 above.

146. The results of these screens of parallel behavior in a market in which spread-fixing collusion was known to be occurring confirms the reliability of Sheet Metal Plaintiffs' analysis of the SSA spreads.

VII. DEFENDANTS' CONSPIRACY INJURED PLAINTIFF AND THE CLASS

147. Defendants' conspiracy inflicted severe financial harm on Plaintiff and the Class and restrained competition in the market for SSA bonds.

148. As a direct and proximate result of their conspiracy, Defendants inflated their own profits while imposing supracompetitive prices and bid-ask spreads for SSA bonds on Plaintiff and the Class. Defendants injured each Class member—including pension funds, university endowment funds, hedge funds, insurance companies, corporate treasuries, fiduciary and depository institutions, small banks, and money managers—through a common scheme resulting in potentially billions of dollars in damages.

149. The conspiracy alleged herein had and is having the following effects, among others:

- a. The SSA bond prices and bid-ask spreads charged to Plaintiff and the Class have been fixed or stabilized at supracompetitive levels;

- b. Plaintiff and the Class have been deprived of the benefits of free, open, and unrestricted competition in the market for SSA bonds; and
- c. Competition in establishing prices and bid-ask spreads paid in the United States for SSA bonds has been unlawfully restrained, suppressed, and eliminated.

150. By reason of the violations of Section 1 of the Sherman Act alleged in this complaint, Plaintiff and the members of the Class have sustained injury to their business or property. The injuries sustained by Plaintiff and the Class are the payment of supracompetitive prices and bid-ask spreads for SSA bonds as a result of Defendants' conspiracy to restrain trade as alleged. This is an antitrust injury of the type that the antitrust laws were meant to punish and prevent.

EQUITABLE TOLLING BECAUSE OF DEFENDANTS' CONCEALMENT

151. During the Class Period, Defendants actively, fraudulently, and effectively concealed their conspiracy from Plaintiff and members of the Class.

152. By its very nature, the unlawful activity alleged herein was self-concealing. Defendants conspired to artificially inflate bid-ask spreads to the benefit of Defendants and to the detriment of Plaintiff and members of the Class, and they further conspired to keep their collusive and manipulative conduct secret. As a result, Plaintiff and the Class did not discover and could not have discovered through the exercise of reasonable due diligence that they were injured by Defendants' conspiracy until at the earliest December 9, 2015 when the DOJ investigation became public.

153. Defendants fraudulently concealed their anticompetitive activities by, among other things, engaging in secret communications in furtherance of their conspiracy. These communications occurred in non-public chat rooms, instant messages, and through email,

telephone calls, and in-person meetings, none of which are or were reasonably available to Plaintiff or members of the Class.

154. The chat rooms in question were operated by high-ranking traders within Defendants' operations, and Defendants strictly limited access to the chat rooms. The substance of the conversations occurring within these chat rooms was unknown to Plaintiff until December 9, 2015, at the earliest. And still, the full contours of Defendants' conspiracy are not public.

155. Defendants knew that they could not subject their collusive conduct to public scrutiny. In addition, Defendants actively and jointly concealed their conspiracy. For instance, Defendants agreed among themselves not to publicly discuss or otherwise reveal the nature and substance of the acts and communications in furtherance of the conspiracy. Defendants even went as far as setting up new chat rooms on a daily basis to avoid detection.

156. None of the facts or information available to Plaintiff, if investigated with reasonable diligence, could or would have led to the discovery of the conspiracy alleged in this Complaint.

157. There are many additional reasons why these facts could not have been known. SSA trades occur primarily in the private, over-the-counter market, and Defendants' trades and trading strategies are not public information. Reasonable due diligence could not have uncovered Defendants' conspiracy because the non-exchange-based, closed, and private nature of the trades helped to conceal Defendants' conduct. Indeed, throughout the Class Period, Plaintiff and members of the Class regularly monitored news reports concerning the financial industry and the SSA market. Plaintiff and members of the Class undertook such activity in order to try to buy and sell SSA bonds at good prices. Nonetheless, Plaintiff and members of the

Class did not know of, and could not have known of, Defendants' conspiracy until the *Bloomberg* article was published on December 9, 2015.

158. Because of Defendants' concealment, any applicable statute of limitations affecting or limiting the rights of action by Plaintiff or members of the Class have been tolled during the period of concealment.

CLASS ACTION ALLEGATIONS

159. Plaintiff, on behalf of itself and those similarly situated, seek damages against Defendants based on the allegations contained herein.

160. Plaintiff brings this action on behalf of itself and, under Federal Rule of Civil Procedure 23(a) and (b)(3), as the representatives of a Class defined as follows:

All persons or entities who, from January 1, 2010 to November 2014, directly entered into SSA bond transactions with Defendants, or their respective subsidiaries or affiliates, in the United States or its territories. Excluded from the Class are Defendants, their co-conspirators identified herein, and their officers, directors, management, employees, current subsidiaries or affiliates, and all federal governmental entities.

161. **Numerosity.** Members of the Class are so numerous that joinder is impracticable. Plaintiff does not know the exact size of the Class, but believe that there are thousands of Class members geographically dispersed throughout the United States.

162. **Typicality.** Plaintiff's claims are typical of the claims of the members of the Class. Plaintiff and all members of the Class were damaged by the same wrongful conduct of Defendants. Specifically, Defendants' wrongdoing caused Plaintiff and members of the Class to pay inflated bond prices when they were buying or receive unduly low bond prices when they were selling.

163. Plaintiff will fairly and adequately protect and represent the interests of the Class. The interests of Plaintiff is coincident with, and not antagonistic to, those of the Class.

Accordingly, by proving its own claims, Plaintiff will prove other Class members' claims as well.

164. **Adequacy of Representation.** Plaintiff is represented by counsel who are experienced and competent in the prosecution of class action antitrust litigation. Plaintiff and its counsel have the necessary financial resources to adequately and vigorously litigate this class action. Plaintiff can and will fairly and adequately represent the interests of the Class and has no interests that are adverse to, conflict with, or are antagonistic to the interests of the Class.

165. **Commonality.** There are questions of law and fact common to the Class, which questions relate to the existence of the conspiracy alleged, and the type and common pattern of injury sustained as a result thereof, including, but not limited to:

- a. whether Defendants and their co-conspirators engaged in an agreement, combination, or conspiracy to fix, raise, elevate, maintain, or stabilize SSA bond bid-ask spreads in interstate commerce in the United States;
- b. the identity of the participants of the conspiracy;
- c. the duration of the conspiracy alleged herein and the acts performed by Defendants and their co-conspirators in furtherance thereof;
- d. whether the alleged conspiracy violated Section 1 of the Sherman Act;
- e. whether the conduct of Defendants and their co-conspirators, as alleged, caused injury to the business and property of Plaintiff and other members of the Class;
- f. the appropriate measure of damages sustained by Plaintiff and other members of the Class;

- g. whether Plaintiff and other Class Members are entitled to injunctive relief;
and
- h. the appropriate injunction needed to restore competition.

166. **Predominance.** Questions of law and fact common to the members of the Class predominate over questions that may affect only individual Class members because Defendants have acted on grounds generally applicable to the entire Class, thereby making a common methodology for determining class damages as a whole appropriate. Such generally applicable conduct is inherent in Defendants' wrongful conduct.

167. **Superiority.** Class action treatment is a superior method for the fair and efficient adjudication of the controversy. Such treatment will permit a large number of similarly situated, geographically dispersed persons or entities to prosecute their common claims in a single forum simultaneously, efficiently, and without the unnecessary duplication of evidence, effort, or expense that numerous individual actions would engender. The benefits of proceeding through the class mechanism, including providing injured persons or entities a method for obtaining redress on claims that could not practicably be pursued individually, substantially outweighs potential difficulties in management of this class action. The Class has a high degree of cohesion, and prosecution of the action through representatives would be unobjectionable.

168. Plaintiff knows of no special difficulty to be encountered in the maintenance of this action that would preclude its maintenance as a class action.

CAUSES OF ACTION

COUNT ONE

**VIOLATION OF 15 U.S.C. § 1
AGREEMENT RESTRAINING TRADE**

169. Plaintiff hereby incorporates each preceding and succeeding paragraph as though fully set forth herein.

170. Defendants, and their co-conspirators, entered into and engaged in a conspiracy in unreasonable restraint of trade in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1. The conspiracy consisted of a continuing agreement, understanding, or concerted action between and among Defendants and their co-conspirators in furtherance of which Defendants fixed, maintained, or made artificial prices on SSA bonds.

171. Defendants' unlawful conduct was through mutual understandings, combinations, or agreements by, between, and among Defendants and other unnamed co-conspirators. Defendants' conspiracy is a *per se* violation of the Sherman Act and is, in any event, an unreasonable and unlawful restraint of trade.

172. There is no legitimate business justification for, or procompetitive benefits caused by, Defendants' unreasonable restraint of trade. Any ostensible procompetitive benefit was pretextual or could have been achieved by less restrictive means.

173. Defendants' conspiracy, and the resulting impact on the prices of SSA bonds occurred in and affected interstate commerce and commerce in and between the Territories of the United States.

174. As a direct, intended, foreseeable, and proximate result of Defendants' conspiracy and overt acts taken in furtherance thereof, Plaintiff and each member of the Class have suffered injury to their business or property. Plaintiff and each Class member's damages are directly

attributable to Defendants' conduct, which resulted in all Class members paying artificially inflated bid-ask spreads on every SSA bond they purchased or sold during the Class Period.

175. Plaintiff's and the Class's injuries are of the type the antitrust laws were designed to prevent, and flow from that which makes Defendants' conduct unlawful.

176. Plaintiff and the Class are entitled to treble damages, attorneys' fees, reasonable expenses, and cost of suit for the violations of the Sherman Act.

COUNT TWO

UNJUST ENRICHMENT

177. Plaintiff hereby incorporates each preceding and succeeding paragraph as though fully set forth herein.

178. Because of the acts of Defendants and their co-conspirators as alleged herein, Defendants have been unjustly enriched at the expense of Plaintiff and the Class.

179. Plaintiff and the Class seek restitution of the monies of which they were unfairly and improperly deprived, as described herein.

PRAYER FOR RELIEF

180. WHEREFORE, Plaintiff, on behalf of itself and the proposed Class of similarly situated entities, respectfully request that the Court:

A. Determine that this action may be maintained as a class action pursuant to Federal Rule of Civil Procedure 23(a) and (b)(3), direct that reasonable notice of this action, as provided by Federal Rule of Civil Procedure 23(c)(2), be given to the Class, designate Plaintiff as Class representatives, and appoint Plaintiff's counsel as counsel for the Class;

B. Adjudge and decree that Defendants' unlawful conduct alleged herein violates Section 1 of the Sherman Act;

C. Adjudge and decree that Defendants have been unjustly enriched by their wrongful conduct and award restitution to Plaintiff and the Class;

D. Permanently enjoin and restrain Defendants from continuing and maintaining the conspiracy alleged in the Complaint;

E. Find Defendants jointly and severally liable for the damages incurred by Plaintiff and the Class;

F. Award Plaintiff and the Class damages against Defendants for their violations of federal antitrust laws, in an amount to be trebled in accordance with such laws, plus interest;

G. Award Plaintiff and the Class their costs of suit, including reasonable attorneys' fees and expenses, as provided by law;

H. Award Plaintiff and the Class all available pre-judgment and post-judgment interest, to the fullest extent available under law or equity, from the date of service of the initial Complaint in this action; and

I. Order such other, further, and general relief as it may deem just and proper.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38, Plaintiff, on behalf of itself and the proposed Class, demands a trial by jury on all issues so triable.

Dated: November 4, 2016
New York, New York

Respectfully submitted,

MOTLEY RICE LLC

By: /s/ Michael M. Buchman

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APPENDIX: NASDAQ “ODD-EIGHTHS” PRICE-FIXING CONSPIRACY

Figure 1.A
Intraday AAPL Bid-Ask Spreads
May 24 - June 2, 1994

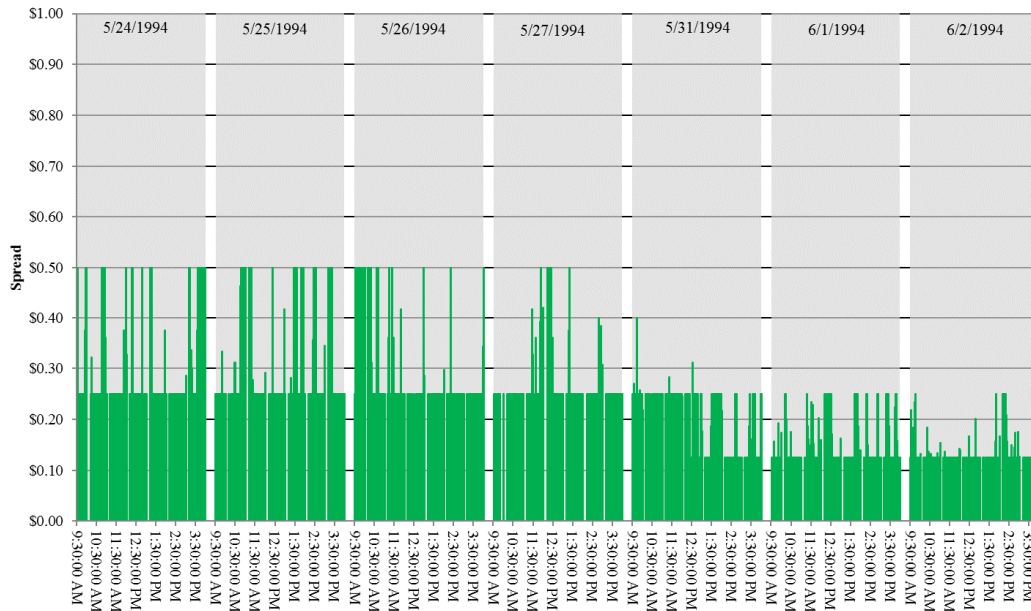


Figure 2.B
Intraday AMGN Bid-Ask Spreads
May 24 - June 2, 1994

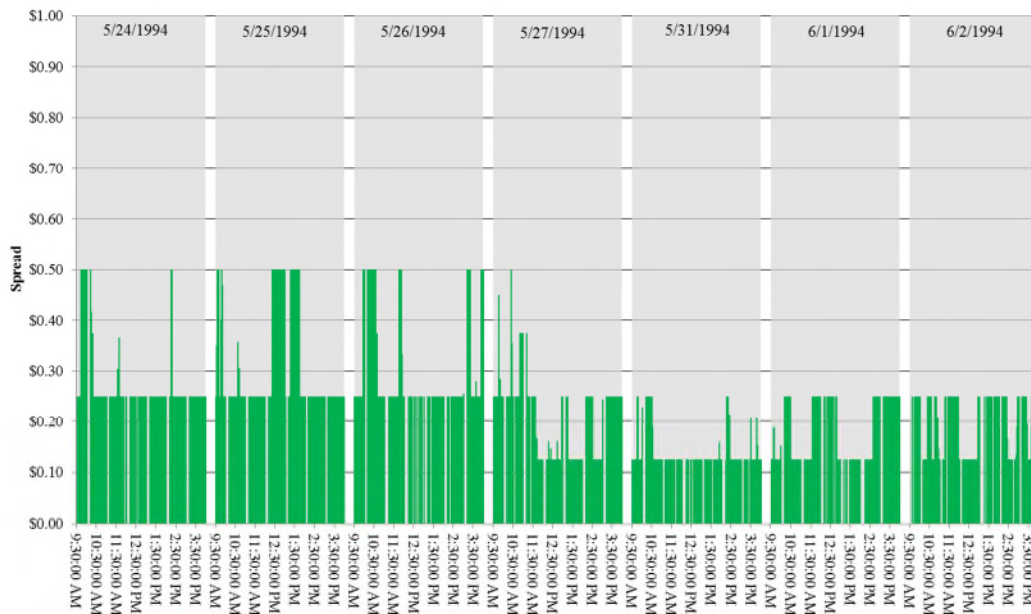


Figure 3.C
Intraday CSCO Bid-Ask Spreads
May 24 - June 2, 1994



Figure 1.D
Intraday MSFT Bid-Ask Spreads
May 24 - June 2, 1994

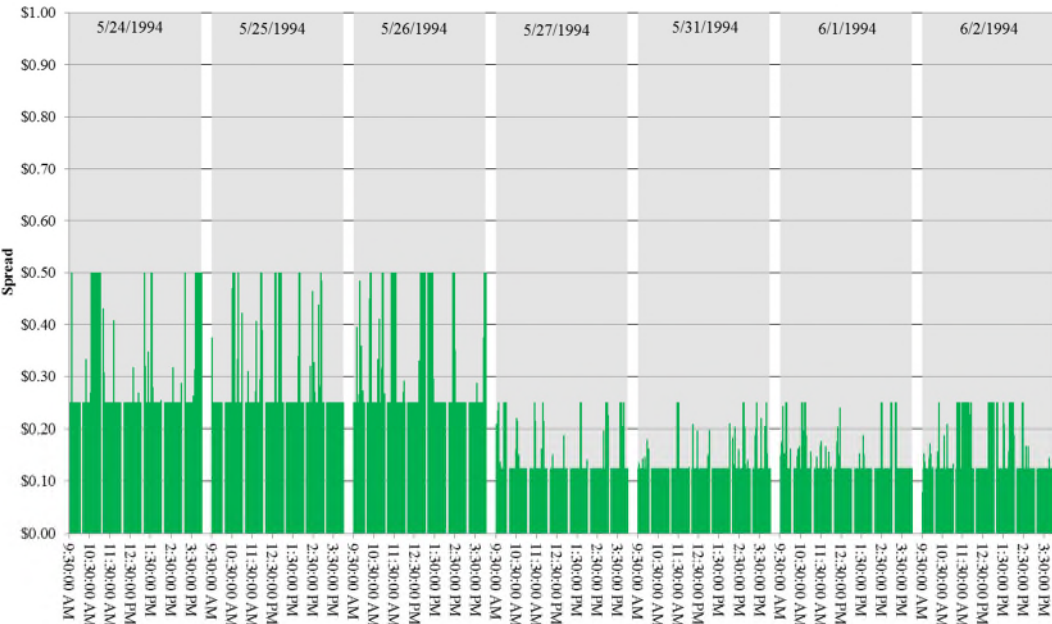


Figure 4

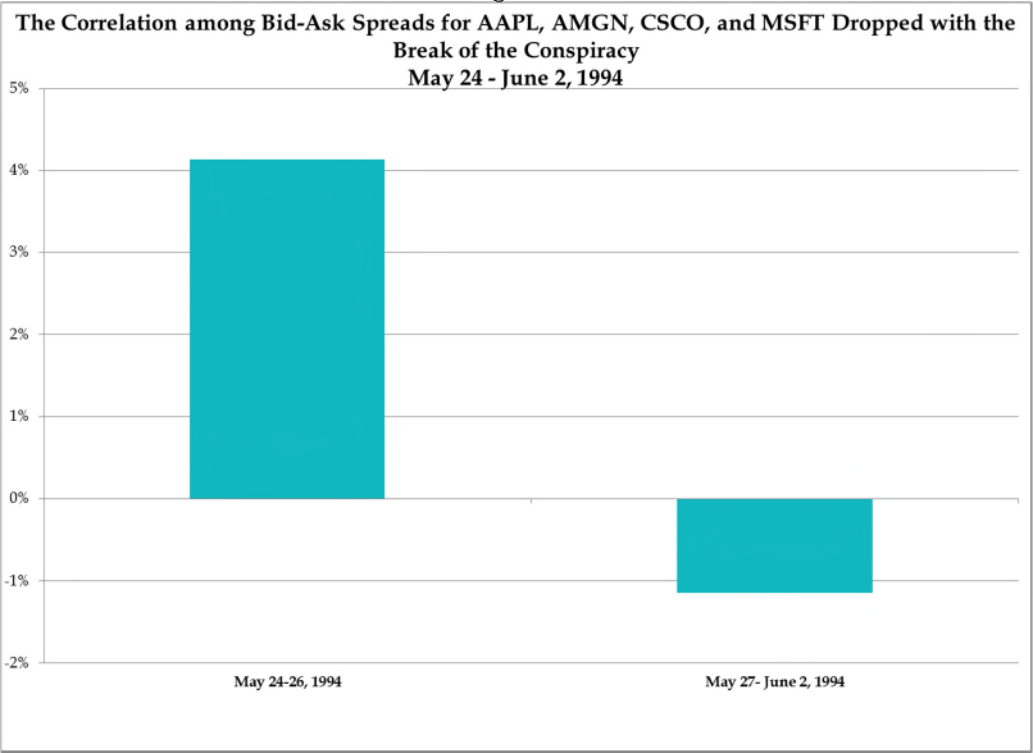


Figure 5

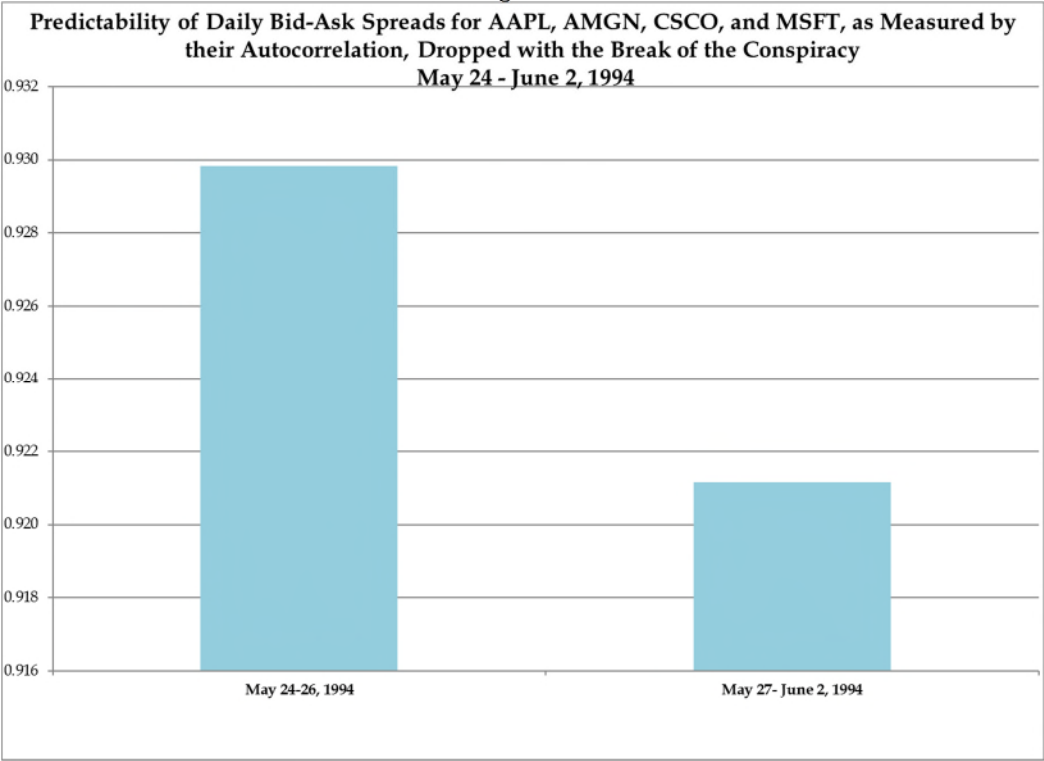


Figure 4

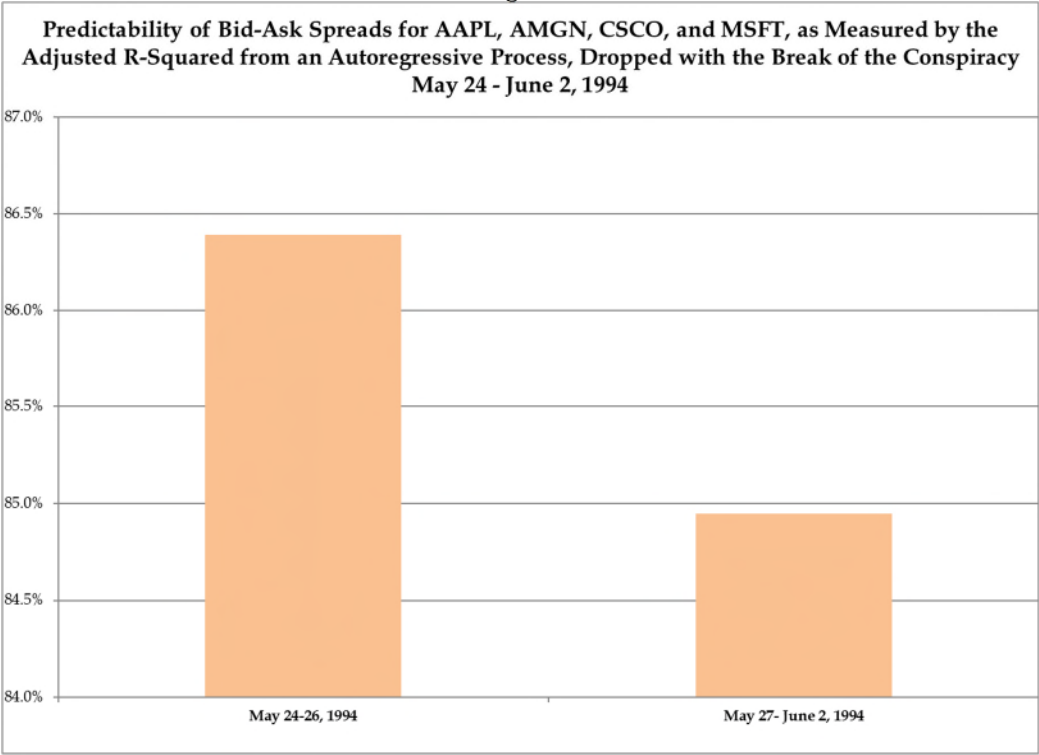


Figure 5

